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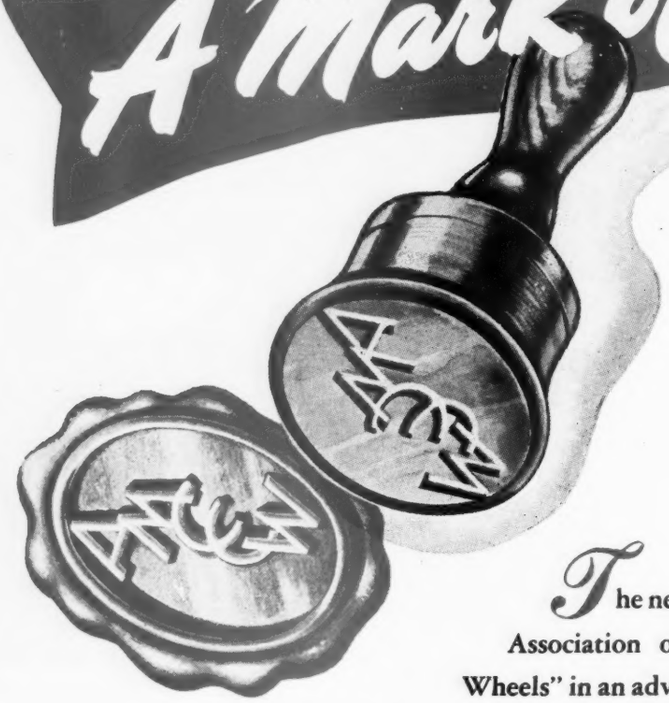

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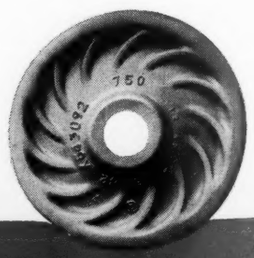

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TRAIN OPERATION BY SIGNAL INDICATION

The Week at a Glance

"VITAMIN C": The "vitamin C" in the diet of a healthy railroad—as of all private enterprise—is *capital,* according to Monon President Barriger, whose address to the Birmingham Traffic & Transportation Club appears as a feature article this week. Neither a railroad nor any other industry can function for long with even passable efficiency without an adequate and continuous supply of capital. Thanks to unprecedented war-time revenues, most railroads now have some capital available. There are many improvements to plant and equipment that they realize the need for, and have planned for. There are plenty of executives full of ideas for betterments that will produce superior service or reduce costs, or both. But there are vastly larger current expenses to be met first, in the form of higher wage rates approved by the government and higher material prices which government policies have made inevitable. It remains to be seen whether government policy will permit the railroads to meet their increased expenses so far as possible from increased earnings. The alternative is to use in this unproductive way the accumulated capital which ought to be used for the new equipment and property improvements that must continually be provided if privately-owned railroads are properly to serve their customers.

●

SELLERS' MARKET: Purchasing agents in their recent annual meeting at Chicago (reported this week on page 1138) were told to beware lest the existing prolonged war-born sellers' market end unexpectedly. Meanwhile, they were advised, buying methods can be adjusted to the conditions peculiar to such markets: purchases can be kept in line with known requirements; more use can be made of substitutes; standardization can be carried further; surpluses from government stocks can be picked up; and materials or products abundantly available can be treated as exceptions.

●

GAS TURBINE ON TRIAL: Results of experiments in Switzerland and France (seriously hampered by war conditions) with a 2,200-hp. Swiss-built gas turbine locomotive have been reported to an A. S. M. E. sectional meeting by Walter Giger, an engineer of Brown, Boveri, in a recent paper which is abstracted in this issue. On the basis of the experience thus gained, other designs have been developed for 2,500-hp. units intended for single or paired operation, and some of the potentialities of these designs are suggested, not only in technical specifications but in estimates of operating economy under prescribed conditions.

●

NO "COOL OFF": Another strike is in effect on the Hudson & Manhattan, where trainmen's leaders say they won't go back to work unless they get the 18½ cents per hour raise which trunk line employees have received. The walkout began on May 30, after President Truman had created a "fact-finding" board to deal with the controversy, thus creating a situation the like of which the Mediation Board has been unable to turn up, that is, refusal of one of the parties to comply with the Railway Labor Act's provision of a "cooling off" period to follow creation of such a board. As the news account in this issue explains, the strike leaders have been loud in their assertions that they would have nothing to do with the "emergency board," and the board's procedure under such novel circumstances was being watched with unusual interest.

●

ALTERNATIVE TO PEACE: There are at least three conditions essential to the realization and preservation of dependable pacific relations between railway unions and management, the leading editorial points out. Much progress has been made toward the first of these—acceptance by both of the peaceful procedures of the Railway Labor Act—and any seeming paradox in that statement is explained by the fact that the two unions out of twenty that recently failed to show any respect for that law now have good reason, at least, to wish that they had. How much progress is made toward the second requisite—positive governmental discouragement of brazen and irresponsible leadership in non-railroad unions—depends on how far political leaders are ready to go to make union bosses really subject to laws that already apply to other citizens. But the third field of opportunity—education of employees in the simple economics of the railroad business — is peculiarly the responsibility of railroad management, and the thoroughness with which that field is worked depends on the energy and resourcefulness of management, not only in making the facts available and appetizing, but in obtaining sincere cooperation from brotherhood leaders in the dissemination of those facts. The probable concomitant of continued domestic industrial discord is external aggression, the seeds of which already are germinating.

●

MARION DIESEL SHOP: Planned new from the ground up, the Erie's spacious and thoughtfully arranged Diesel-electric locomotive shop at Marion, Ohio, permits engine movement in one direction, without backtracking, while taking care of almost every possible maintenance or heavy repair task. Modern illumination and many automatic features characterize this installation, which is the subject of an illustrated article on page 1130.

●

BRIEFLY NOTED: The T. P. & W. has resumed limited operations and is accepting some freight. . . . The Norfolk & Western has elected Robert H. Smith president, making William J. Jenks chairman of the board. . . . Virginia's "Jim Crow" law doesn't apply to interstate buses, the Supreme Court says. . . . Hobby trains and augmented service to New England resorts have been announced. . . . The Retirement Board's monthly outlay for unemployment benefits is on the rise. . . . The A. A. R. accounting division meeting will begin June 18 as scheduled. . . . O. D. T. wants $525,000 for next year.

DIMINUENDO: In a press conference President Truman made it clear that, just now, President Whitney of the trainmen's brotherhood is not his favorite author. While he thus declined to comment on the union's version of telephone conversations between Mr. Whitney and Alvanley Johnston on one end, and the White House on the other, at the time the 5-day postponement of the strike was ordered, there was no shortage of comment in other quarters, not only on this bit of brotherhood publicity but on many other incidents connected with the settlement of the strike. As reported in the news pages, one member of the Senate has been very much concerned as to whether Mr. Truman knew that the strike leaders had accepted the White House terms when he began his May 25 address to Congress, and has called for an "investigation."

●

IN THE RED AGAIN: Action on the general freight rate increase the railroads have asked the Interstate Commission to approve has been held up, according to a news story in this issue, because the class rate litigation following the No. 28300 order is still going on. Meanwhile, the A. A. R. estimates of "net" for April and the first four months indicate, railroad deficits continue to pile up. At the moment the injunction against putting into effect the interim class rate changes prescribed by the commission remains in force, pending determination of the issues by the Supreme Court, but the commission and the Attorney General have asked that it be vacated while court proceedings take their course.

●

"SLOWTONE": A semi-automatic radio warning device, intended for use on radio-equipped trains, has been undergoing tests on the Seaboard in Georgia. A very high frequency unmistakable warning is broadcast as a series of high-pitched notes, repeated at short, regular intervals as long as the actuating switch remains on. Under the conditions prevailing when the tests were made the warning was audible from one to three miles farther than voice communication, and, while subject to fading, it was less affected than the train-to-train radio telephone. Under the most adverse circumstances its range was around five miles. Not intended to replace any safety equipment or practices adopted by the railroads, the device is designed to be a means of warning approaching trains of an unexpected stop or other abnormal occurrence requiring special caution.

●

C.T.C. ECONOMICS: When the earning power of a possible centralized traffic control installation is being estimated, an editorial points out, the major part of the savings it produces in speedier operation and increased track capacity properly should not be weighed against the entire cost, but only against the amount by which that cost exceeds that of straight automatic signaling. And the additional cost can usually be partially offset, at least, by the elimination of sidings and reduction of operators which it permits.

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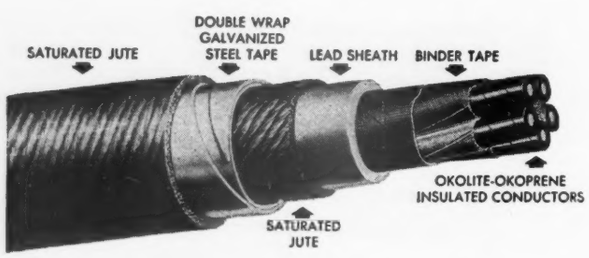

OKOLITE-OKOPRENE PARKWAY CABLE

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4612

RAILWAY AGE

Domestic Conflict Invites External Aggression

In addition to the problems confronting railroad managements because of reviving competition, wage increases, and the need for higher freight rates, it must now also be recognized that the outlook for international peace is not as bright as it was last fall. Indeed, if nothing but the tangible evidence be considered, there is no less reason today to fear the involvement of this country in war than there was in 1938 and 1939. At that time Germany and Japan were expanding aggressively and would listen to no terms except capitulation from those in the immediate path of their expansion. There was, however, no credible evidence that either one of these powers entertained serious and specific designs against the integrity of this country or even of the Western Hemisphere. Neither of them had "fifth columns" of any real influence except in countries which were contiguous to them or nearly so.

By contrast, we have today, thanks largely to the caliber of our war-time political leadership, a Russia which is far stronger than either Japan or Germany ever was; and it is just as totalitarian, and even more insistent than they were upon abject capitulation by all individuals and nations within its immediate military reach. Furthermore, this new totalitarian giant has active and powerful "quisling" organizations in every other country of the world, including this one; and it quite openly neither desires nor expects general peace until all the world has been Communized. There were no pro-Japs or pro-Nazis in 1938 or 1939 who had even a fraction of the influence in this country that thousands of apologists and agents for the Russian government now exercise; and, if there had been Axis agents in such numbers among us then, they would not have been tolerated as the open and clandestine agents of Communism are tolerated now.

In Readiness Lies Safety

The railroads must weigh such evidence as this and take it into account as they did similar rumblings seven years ago. Further details as to these warlike omens are available, among other dependable sources, in current articles by the expert on international relations, J. F. Dulles, in "Life" magazine, and by Dr. Felix Morley, formerly editor of the "Washington Post," in the May 29 issue of the weekly news-letter, "Human Events". The more seriously such unfavorable developments are viewed by leaders of transportation, of industry, and of government, the less likely it is that *actual* armed conflict will occur, because this country is not going to be attacked unless our weakness and lack of preparation encourage our enemies to expect an easy victory.

Readiness for possible military duty, however, lays upon the railroads, upon industry, and upon leaders in labor and politics a greater obligation than mere physical preparedness. It also demands of all of them that they seek to resolve the causes of domestic conflict. The recent and current aggressiveness of organized labor is made to order to fit the purposes of this nation's ill-wishers; indeed it seems likely that at least some of this agitation is of direct alien origin. Meantime, to the contrary, it is certainly an encouraging sign that all but two of the railway unions in the recent wage controversy confined their activity to the orderly processes laid down in the Railway Labor Act—and that the two which did not do so probably now wish they had. The misadventures of Messrs. Whitney and Johnston might serve to put some new life into the expiring body of that statute; and possibly some respect for this legislation may even have been aroused on the part of the Administration itself, now that it has had experience with an actual railroad strike.

Progress Toward Peace in Industry

There are at least three requisites to dependable industrial tranquillity on the railroads, viz., (1) the acceptance of the peaceful procedure of the Railway Labor Act by both parties in all cases where such submission does not result in patent and intolerable injustice, and insistence by the Administration upon such acceptance; (2) the statutory and administrative discouragement by the government of irresponsible behavior by leaders of non-railroad unions, which gives such unions an unfair advantage over the railroad unions and thus by competitive pressure impels the railroad unions to similar behavior; and (3) the dissemination among railroad employees of economic information about the railroads, so that in making their demands they will not forget the old story about the goose which laid the golden eggs. There are no issues between railroad unions and managements which cannot be resolved if the facts of the railroads' situation are honestly faced.

Progress already has been made with reference to point (1), by the apparent willingness of most of the railroad unions, once again, to make their behavior conform to the pattern of the Railway Labor Act. Progress toward requisite (2) depends upon whether or not President Truman approves the so-called Case bill, requiring unions to obey some of the laws against violence and monopoly practices that now apply to all other citizens except unionists; and upon the enactment of further similar legislation (not anti-union laws, but legislation to end union exemption from the laws). Progress toward point (3)—more and improved education of

employees in the economics of the railroad business—requires not only more effort and resourcefulness on the part of railroad managements toward this end, but greater cooperation in this direction on the part of union leadership as well. The purpose of genuine economic education of employees is not, after all, to discourage them from making legitimate demands on their employers, but only to persuade them to cut their coat according to the cloth.

The ineptitude, self-seeking, and timidity of this country's political leadership has worked us into a serious fix—both domestically and in our international relations. But free people can rectify such mistakes, given courage and intelligence—and time. The pressing danger now lies in the possibility that we shall exhaust our time quota before we get around to putting the factors of courage and intelligence into full play.

Diesel Locomotive Fires

Fire damage as a serious hazard of Diesel-electric locomotive operation was not anticipated by either the manufacturers or the railroads. This fact has been emphasized by the inadequacy of the fire-protection equipment installed in this type of motive power and by the lack of inspection and maintenance practices which would have eliminated some of the conditions responsible for the fire losses that have been sustained. Having been caught off-balance by the magnitude of the damage, the railroads, individually and collectively through a special committee of the Association of American Railroads, are striving to reduce these losses by both preventive and protective measures. Early solutions to the problem are important because of the current rapid increase in the number of Diesel-electric locomotives in service and because out-of-service time of this valuable motive power is expensive.

Anticipating only minor fires in Diesel locomotives from electrical equipment failures and oil leakage, the units have been equipped by the manufacturers with extinguishers capable only of controlling fires in the incipient stage. Now that a need has developed for more adequate fire protection, the logical time and place to install the equipment is at the builder's plant before the locomotives are delivered. If adequate protection demands the addition of tanks, piping, hose, additional portable extinguishers, fire-detection devices and alarm systems, then design changes may be necessary to accommodate the equipment, and such changes can be made more readily on the drafting board than in a railroad shop. Fortunately, installations of complete fire protection for these locomotives have been designed and can be made available so that no delay need occur while tests are made to determine the adequacy of fire-fighting equipment.

A study made last year by the A. A. R. committee showed that brake-shoe sparks caused 19 out of the 61 fires reported. However, the sparks would have caused only a few fires if inflammable material in the form of oil-saturated dirt on the trucks and underframes had not been accumulating in wait for just such an igniting agent. Effective cleaning of these parts would have eliminated this hazard in most cases. In a few instances, fuel tanks were punctured by flying objects and brake-shoe sparks set fire to the oil sprayed from the tanks on the undersides of the locomotives and adjacent cars. To remedy this hazard protective plates have been used to guard the fuel tanks.

The other 42 fires had 17 different causes, most of which probably could not be anticipated. Nine fires resulted from crank-case explosions, seven from collisions, four from defective exhaust stacks, three from ruptured oil lines, and ten were caused by seven different electrical devices and defects.

This variety indicates the necessity for close inspection, maintenance and cleaning of all equipment. It also shows that there is need for fire-fighting capacity to control those fires that are caused by unpredictable conditions.

Dixie's Attitude Toward Federal Aid Has Changed Some in 85 Years

Article I, Sec. 8. The Congress shall have power . . . to regulate commerce with foreign nations, and among the several states and among the Indian Tribes; but neither this, nor any other clause contained in the constitution, shall ever be construed to delegate the power to Congress to appropriate money for any internal improvement intended to facilitate commerce; except for the purpose of furnishing lights, beacons, and buoys, and other aids to navigation upon the water, and the improvement of harbors and the removing of obstructions in river navigation, in all which cases, such duties shall be laid on the navigation facilitated thereby, as may be necessary to pay the costs and expenses thereof. . . . .

—From the Constitution of the Confederate States of America, 1861.

Making the Most of Plant Improvement

When improvements are made in the fixed properties, they frequently incorporate developments of a mechanical nature or new features of construction or arrangement which are entirely unfamiliar to the employees who will use them. Are steps always taken to instruct employees in the correct method of operation or use of the new facilities?

Most structures built by the engineering forces are used or operated by the employees of other departments. When designing such structures the engineering forces usually consult representatives of the using departments to make certain that the facilities will best serve their purpose. Is it not equally important to go a step further and do what may be necessary to acquaint employees with the best way to use the facilities, and then make certain that the instructions are followed?

Most engineers can recall instances where facilities, designed with the greatest care and built at considerable expense, have been used in anything but the most effective manner because of either ignorance or negligence on the part of employees. It is discouraging to note,

for instance, in a new shop building, equipped at large additional expense with the latest devices for achieving effective ventilation, that the atmosphere is often laden with smoke or exhaust fumes because the ventilating system is not being used correctly; or that the track layout in a new or modernized yard is being operated in a manner entirely different from that worked out by the designer in collaboration with the operating department. It is equally disconcerting to observe that devices furnished to promote efficiency are not being employed in a manner to derive full benefit from them—instances being on record of automatic operation or controls having been cut out entirely by the using forces, because of either real or fancied difficulties encountered in their use.

Spending money for improvements only to have them misused or not used at all is pure waste. It is the joint responsibility of the engineering forces and the using departments to make known the proper use of additions to plant, and to see to it that such instructions are carried out.

If It Isn't One Thing—

When it appeared certain that a victorious end to the war was in sight, railway officers foresaw a period of comparative ease ahead. So did shippers. The railways, it was said, would need little or no reconversion, because the change from handling war-time transportation to peace-time transportation was merely a change in the commodities handled and the distances which they had to be hauled. Everyone looked for a speedy return to normality, since no re-tooling as such was necessary. New rolling stock and improvements to the physical plant were necessary, of course, but, compared to war-time stringencies in materials, peace-time prospects looked rosy indeed.

On the part of the shippers, it now appeared that the somewhat rigid war-time rules as to car handling and heavier loading might be abandoned or at least modified. Car vigilance committees of the regional advisory boards were about to be discarded, having served their war-time purpose effectively and well. As a matter of fact, in some circles, there was even talk that the boards themselves might be unnecessary.

Actual experience soon showed what a will-of-the-wisp this prospective transportation picnic actually was. First came the severe winter of 1944-45, the effects of which, so far as the car supply was concerned, lasted right into the wheat harvest, which incidentally was a bumper crop, requiring many thousands of cars. Then the steel strike was called and this hampered the railways in securing a wide variety of needed rolling stock and materials. Also, freight traffic did not take the nose-dive that was expected in some circles and passenger traffic remained sky-high with the movement of returning troops. Then the General Motors strike interfered with the delivery of many Diesel-electric locomotives which the railways had on order. Demands for consumer goods were, meanwhile, keeping factories and freight cars, particularly box cars, extremely busy.

The breathing spell, during which the railways could lick their war wounds and make adequate preparations for the future, receded farther and farther. Actually, emergency conditions have existed, without a let-up, ever since V-J Day, involving problems that seemed more difficult to solve than the railways' war-time problems. Then along came the coal strike to set the railways back on their heels with another smashing blow; and, to top it all off, the railroad strike.

There is one thing about the future about which there can be no uncertainty. The railways for the rest of this year at least simply will not be able to handle the freight offered without serious car shortages, unless the shippers continue their cooperation in speedy car handling and heavier loading.

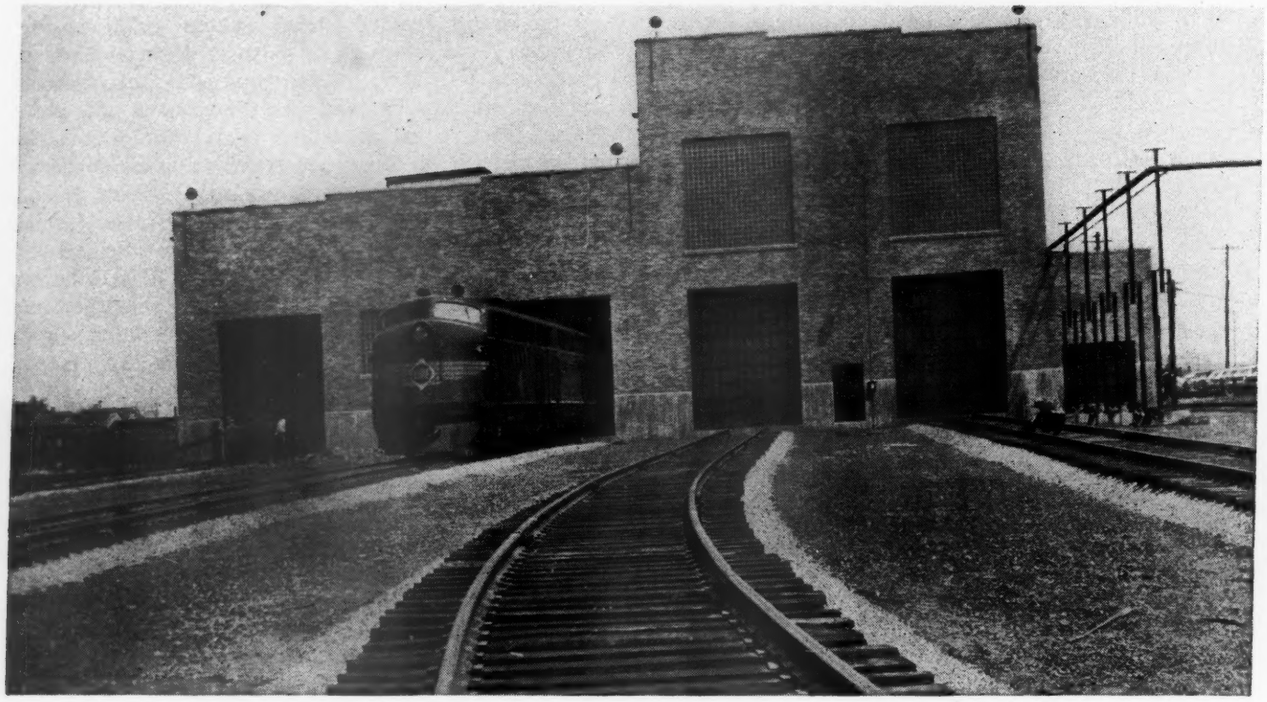
C. T. C. Compared with Automatic Block Signals

When planning new or revised signaling projects an important consideration is that the bulk of the savings accomplished by centralized traffic control can be credited not to the proposed expenditure as a whole, but rather to that portion which represents the cost of the C. T. C. over and above the cost of automatic block only. The important point is that straight automatic block provides protection but requires the continued use of the outmoded practice of authorizing train movements by timetable and train orders, whereas dispatcher-controlled C. T. C. includes signals for authorizing train movements by signal indication.

Track circuits, certain signals, line circuits, batteries and various other items must be installed in practically the same manner for straight automatic block as for centralized traffic control. Conventional automatic block includes intermediate signals to provide head-on protection between opposing trains which might disregard train orders and pass opposing normally-clear station-leaving signals simultaneously. With C. T. C. the station-leaving signals normally display the Stop aspect and no two such signals can be cleared simultaneously. Therefore, the intermediate signals are not required to provide head-on protection; and only enough intermediate signals need be installed to serve as distant signals and to permit following train movements in a station-to-station block if the volume of traffic warrants such operation.

Another consideration is that, as a general rule, the installation of automatic block will not effect changes in train operation that will permit the removal of any sidings, or the closing of very many telegraph offices. On the other hand, an installation of C. T. C. will increase track capacity and get trains over the road in less time, so that it is usually practicable to remove several sidings or convert them to spurs. On one installation of 107 miles only 11 of 24 sidings were equipped for C. T. C. signal operation. The elimination of such sidings is an effective means of reducing the costs of a proposed C. T. C. installation.

It will, therefore, often be found that the savings in train time and other operating expenses from reductions in the number of open offices and sidings possible under centralized traffic control will easily justify the additional cost of C. T. C. over that of straight automatic block alone.



Westerly end of the shop building, showing a locomotive entering the service section

Erie Diesel Layout Has "Everything"

Installation at Marion, Ohio, has through-type arrangement, shops for maintenance and heavy repairs, and complete servicing plant — Many automatic features

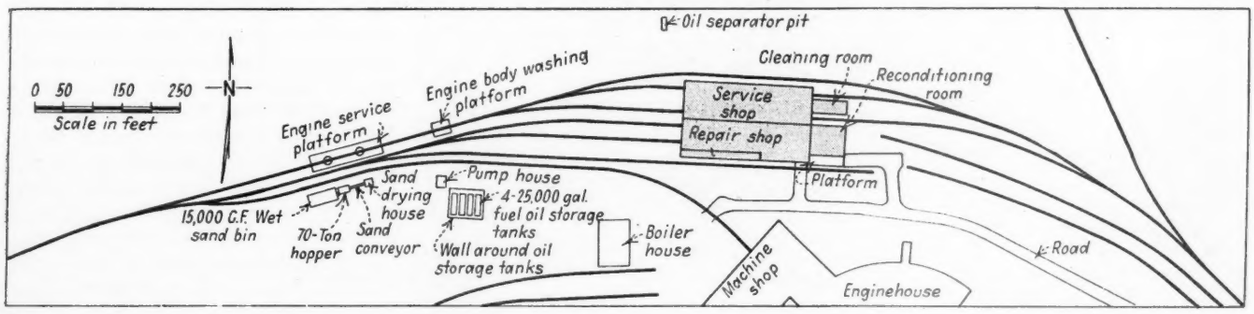
FOR inspecting, servicing, repairing and overhauling the Diesel-electric road freight locomotives in service on its main line between Meadville, Pa., and Marion, Ohio, the Erie has constructed complete facilities at the latter point, which are designed to minister to almost any conceivable need of the locomotives, with maximum efficiency and effectiveness and at minimum cost. These objectives were accomplished by giving special attention, in the design of the facilities, to achieving an efficient arrangement, mechanizing the operations wherever possible, making maximum use of devices for automatic operation, and providing the best possible working conditions for employees, with particular emphasis on proper ventilation and illumination, both natural and artificial.

The territory between Meadville and Marion includes the heaviest ruling grades (about one per cent in each direction) on the main line of the Erie between New York and Chicago. To overcome the operating difficulties formerly encountered, the railroad has placed six four-unit 5,400-hp. Diesel-electric locomotives in service for hauling freight trains over the 200 miles between these points, thereby eliminating the necessity of reducing tonnage. Marion, the westerly terminus of this territory, was already the site of an extensive engine terminal for steam locomotives. However, the new facilities that have been installed for handling the Diesel-electric locomotives are entirely independent of the existing terminal, with the one exception that the requirements for steam and air are furnished from the existing power plant.

Principal Units

The new installation, located immediately north of the terminal for steam power, includes a shop building of the combined type, with facilities under one roof for both running maintenance and heavy repairs; an outside fueling platform, with equipment for washing the running gear of the locomotives; fuel storage tanks and pumping equipment; a sand-drying plant with storage tanks and outlets at the fueling platform; and a power-driven, automatically-operated body-washing rack. The layout is of the through type; that is, the tracks extend entirely through the running maintenance shop, so that movement of the locomotives is in one direction only, with no backtracking. When a Diesel-drawn freight train pulls into Marion from the east, it proceeds to the freight yard west of the engine terminal, where the locomotive is detached and brought back to the new layout to be fueled, sanded and washed and then sent into the running maintenance shop. When necessary work has been completed the locomotive continues through the shop, returns to the through running tracks and proceeds back to the freight yard.

The main shop building is substantially rectangular and is 126 ft. wide overall and 222 ft. long, with the long dimension east-west. The service portion of the shop, including two through tracks with pits and platforms, is 62 ft. wide and is in the northerly part of the build-



Layout of the new Diesel shop and servicing facilities

ing, while the shop for making heavy repairs is in the southerly portion. Along the south side of the structure is a leanto 13 ft. wide and 140 ft. long for storing mounted wheel assemblies.

At the easterly, or exit, end of the main building are two extensions, both with first floor and basement levels. One of these, located between the two through tracks, is 22 ft. wide and 60 ft. long, with an office and facilities for cleaning parts on the first floor, and toilet and rest-room facilities for employees on the lower level. In the other extension, immediately to the south, which is 51 ft. wide and 60 ft. long, the main floor is used as a shop for reconditioning engine parts, while the basement level contains tanks, pumps and other equipment for storing, handling and processing lubricating oil. A covered platform, served by a spur track, extends along the south side of this extension.

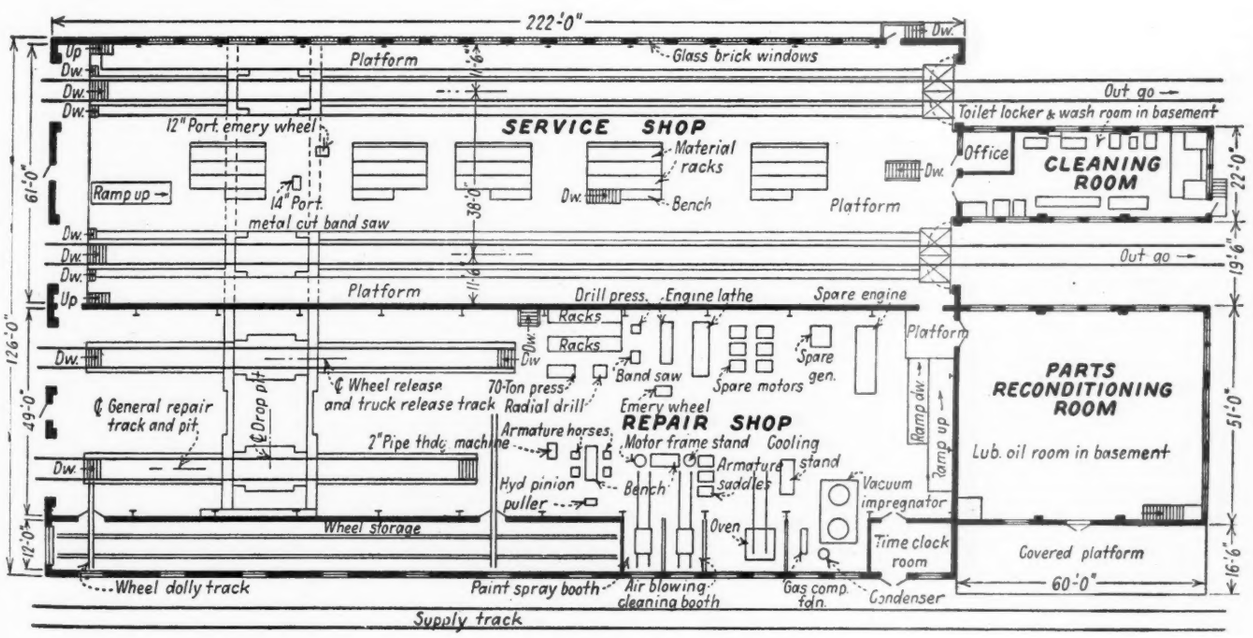
The shop building is of concrete, brick and steel construction, with a roof consisting of 2¾-in. Haydite slabs covered with three-ply built-up roofing. The main portion consists of two longitudinal bays, one for the service section, and the other, somewhat higher, for the repair shop. In both bays the roof structure is supported by transverse steel trusses framed into steel columns in the side walls, with the top chords of the trusses pitched downward toward the outside walls where roof gutters are provided for drainage.

Ample daylight illumination is supplied, partly by means of large panels of glass blocks in all exterior walls of the main building. Generous use is also made of conventional steel sash, with pivoted sections, for both illumination and ventilation. In the service section an additional source of daylight is a clerestory, 12 ft. in width, which extends along the center line of this bay for nearly its entire length. The side walls of the clerestory consist of continuous bands of steel sash, glazed with wire glass, which are movable to aid ventilation.

At each end of the service bay are two locomotive doors, which are of the motor-operated overhead type. They are of wood construction with large panels of wire glass. The two doors at the entrance end are automatically operated by means of "electric eyes" mounted on the exterior wall beside the door openings. These eyes are actuated both day and night by the headlights of approaching locomotives, permitting them to enter the building without stopping. Visors over the "electric eyes" prevent their being affected by the rays of the sun. After a locomotive has entered the building, push-button control is used to close the door.

Interior Arrangement

The service bay has two reinforced concrete engine pits, each of sufficient length to accommodate a complete four-unit locomotive, a depressed floor level 33 in. below the tops of the pit rails, and an upper working level at the eleva-



Floor plan of the shop building

One of the pits in the service shop, showing body supports at drop table in "out" position—also overhead engine exhaust system

tion of the cab floors, which consists of three platforms, one 6 ft. wide along each side wall and one 27 ft. wide between the two pits, all of them having timber decks supported on tubular steel columns. The edges of the platforms are protected by steel-pipe safety railings containing removable sections at the locations of the locomotive doors. Spaced throughout the length of the center platform is a series of enclosures with wood shelves for storing materials and small parts.

Movable Rails and Platforms

The three platforms extend the entire length of the service bay except for a space 8 ft. wide at the entrance end where the concrete floor is level with the top of rail. In the design of the exit end of the service bay, a problem was presented by the fact that, while it was desirable to have means of communication for workmen between the working areas on both sides of the tracks at both the upper and lower levels, this had to be done without interfering with the movement of locomotives out of the shop. Insofar as the lower level is concerned, this problem was solved by an ingenious arrangement at each track, by means of which a section of the rails can be swung out of the way when not in use so that passage may be had from one side of the inspection pit to the other without climbing over the tracks. To permit passage across the tracks at the upper working level the arrangement includes a movable section of platform at each track, which is similar to a double-leaf bascule bridge.

Normally the sections of the "bridge" are in the lowered position, permitting workmen to pass back and forth between the different sections of the upper working level, and the hinged sections of track rails are folded back against the east wall, leaving passageways between the various areas of the depressed working level. When it is desired to move a locomotive out of the building over one of the tracks, the "bridge" is raised, and, simultaneously, the movable rails are swung into position in line with the adjacent sections of track and the exit door is opened.

The movable portions of the platform and the rails are power operated by compressed air controlled by solenoid valves actuated by push buttons. There are two push-button stations for each movable arrangement, one on a pedestal on the upper level, within convenient reach of the cab windows of the locomotives, while the other is mounted on the wall near the door so that workmen also can control the positioning of the platform "bridges" and the swinging rails.

For changing out the trucks of the Diesel locomotives and transferring them to and from the repair shop, a 60-ton Whiting drop table is installed in the building. This operates in a transverse tunnel extending the entire width of the structure. Drop-table tops are provided over the tunnel at each of the two tracks in the service section of the building, as well as at two tracks with pits in the repair shop. For supporting the locomotive bodies while the trucks are being changed out an arrangement of retractable arms has been installed at each of the drop-table locations in the service section. This arrangement consists of two supporting arms, one on each side of the track, which may be extended to protrude 15 in. beyond the edges of the platform to engage the jacking pads under a locomotive body. When not in use the supporting arms are withdrawn into the clear, being actuated by compressed air controlled by separate valves for each support. Each arm is supported in and extends through a structural steel box girder spanning between steel pedestals on each side of the drop table pit.

Locomotive exhaust fumes and gases are removed from the service shop by eight smoke jacks with power-driven suction fans, four of which are arranged over each track in such a position that there is a smoke jack for each locomotive unit. Each of the smoke jacks embodies a 24-in. roof-mounted ventilator with a capacity of 4,760 cu. ft. per min., which draws the gases through a vertical asbestos-cement pipe, having a horizontal component about 14½ ft. long at its lower end, the latter being suspended from the underside of the roof by means of steel hanger rods. In the underside of each horizontal pipe are four intake pipes or hoods which are spaced and arranged to fit over the four exhaust outlets in the roof of each locomotive unit.

Illumination—Heating

General illumination for night work in the service shop, and also for auxiliary use during the daytime if needed, is afforded by fluorescent lights hung from the lower chords of the roof trusses, with additional lighting underneath the platforms in the form of incandescent fixtures, and 200-watt flood-type fixtures in the side walls of the engine pits.

Heating of the service shop is accomplished by four unit heaters placed under the central platform, with outer grills in the deck of that platform. The output from these heaters is also used to melt accumulations of snow and ice on the running gear of locomotives, by means of a system of ducts conveying the heat to wall grills in the pits at the locations of the locomotive axles.

A system of piping under the platforms in the service shop includes lines for lubricating oil, scavenger oil, distilled cooling water, compressed air and steam, with connections at appropriate intervals along the edges of the plat-

forms. Distilled cooling water for the locomotives is pumped from two 6,000-gal. storage tanks underneath the central platform. The supply of distilled water is furnished in the form of condensation from the steam sand dryer, from which it is delivered by steam trap discharge pressure to the two storage tanks. Also located under the central platform is a small motor-driven pump for pumping scavenger oil from the crank cases of the locomotives into lines leading to reclaiming equipment in the oil storage room.

Other Rooms

The parts cleaning room, located in the northerly extension at the east end of the shop, contains two cleaning vats at the extreme easterly end, which are served by a one-half-ton jib crane. Arranged along the southerly wall of this room are a cleaning tank for air filters, draining ovens for the various types of filters, and certain other facilities, all served by a 400-lb. mono-rail crane, the track of which runs nearly the length of the room. Other equipment in this room includes work benches, skid and waste boxes, filter racks and a tool locker, with an office, 10 ft. by 12 ft., located in one corner.

The rest room for employees, directly under the parts cleaning room, contains toilets, lockers, benches and tables. Washing facilities include two circular lavatories with hot and cold water. This room has a generous amount of window space for daylight illumination and, like the other rooms in the building, is heated by unit heaters.

The parts reconditioning room, which occupies the platform floor level of the other wing at the east end of the building, is equipped with such machines as emery wheels, a small metal band saw, a cylinder honing fixture, a portable drill press and necessary work benches.

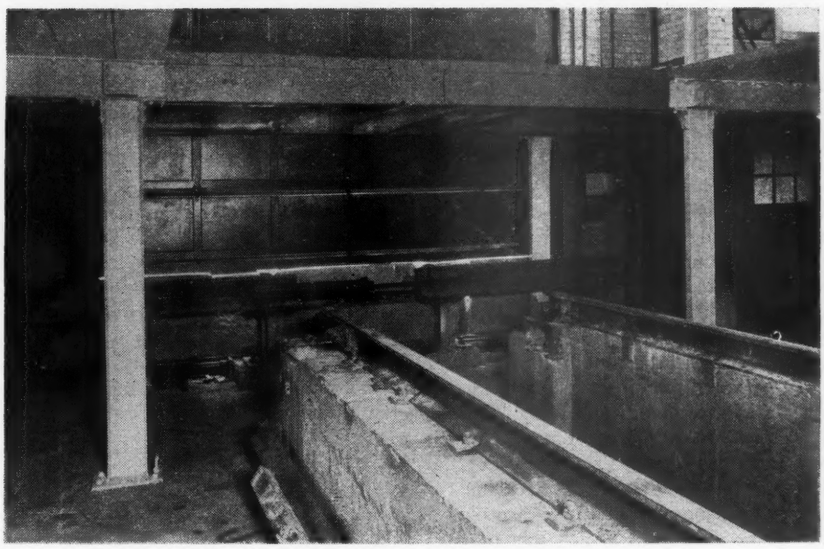
Repair Shop

The lubricating oil room, directly beneath the parts reconditioning shop, contains four 6,000-gal. horizontal tanks, two for new oil, one for scavenger oil and one for reclaimed oil. One of the tanks for new oil is insulated and heated with steam coils so that the oil may be preheated before being pumped into the crankcases of the locomotives. Other equipment in this room includes two motor-driven pumps for pumping oil to the outlets at the service platforms, or from tank cars into the storage tanks, and an oil purifier with a capacity of 75 gal.

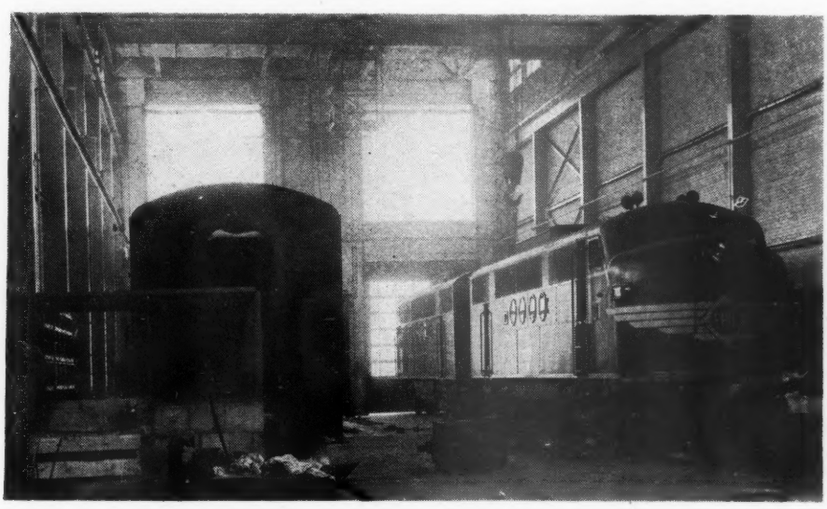
The repair shop in the southerly portion of the main building is equipped for overhauling and making major repairs to the Diesel locomotives and their principal parts, such as the engines, generators and traction motors. This section of the structure has a single working level at the elevation of the two tracks which enter it from the westerly end. Each track is built in connection with an inspection and work pit of sufficient length to accommodate two units of one of the road Diesels, or an entire switching locomotive, and both of them are served by the 60-ton drop table and a 25-ton traveling crane with A-C dynamic lowering control. The crane has a suspended push-button station by which it can be controlled from the floor, or the station can be taken to the cab for cab operation.

The easterly portion of the repair shop, beyond the ends of the engine pits, is given over to the machine tools and other facilities required in making repairs. The machine tools, located principally along the north wall, include a 17-in. portable drill press, a 4-ft. radial drill, a 14-in. portable metal band saw, an 18-in. by 10-ft. engine lathe, a 36-in. by 16-ft. engine lathe, a 20-in. emery wheel and a 70-ton hand-operated rod press. This side of the building also contains truck material racks and, near the extreme easterly end, space for six spare traction motors, a spare generator and a spare Diesel engine.

Arranged along the southerly wall are a paint spray booth, an air-blowing cleaning booth, an armature baking oven and an armature vacuum impregnator. Also included in this general area are a 2-in. portable pipe-threading machine, a



Easterly end of pit in service shop with platform "bridge" closed and swinging rails folded against wall



Looking west in the shop for making heavy repairs

portable hydraulic pinion puller, a combination induction pinion heater and Magnaflux transformer, armature horses, armature saddles, an armature cooling stand, an induction heater for applying and removing roller bearing journal sleeves, and necessary work benches. The wheel storage area in the leanto along the southerly side of the main building has space for storing 57 pairs of mounted wheels. The wheels are moved to and from the storage area on two track-mounted dollies, with 14-in. gage, located at opposite ends of the nearest track in the repair shop.

Artificial lighting for general illumination in the repair shop is by 400-watt mercury vapor lamps, some of which are hung from the lower chords of the roof trusses, while others, with the reflectors arranged at an angle, are placed along the side walls at a height of 18½ ft. above the floor level. The engine pits have inclined wall lights.

The shop building and its appurtenances, both outside and inside, are painted in accordance with a definite color scheme designed not only to give a pleasing appearance but also to identify the functions of the various pipes or other parts.

Servicing Platform

The outside platform where the Diesel locomotives are fueled, sanded and their running gear washed is located about 500 ft. west of the shop building. This is a single-track platform built of reinforced concrete, 26 ft. 3 in. wide and 117 ft. 4 in. long. The rails are supported on short timber ties imbedded in the concrete, and a timber walkway about 5 ft. wide extends the length of the platform on each side of the track. Conduits are built into the platform for enclosing water, steam and fuel-oil lines.

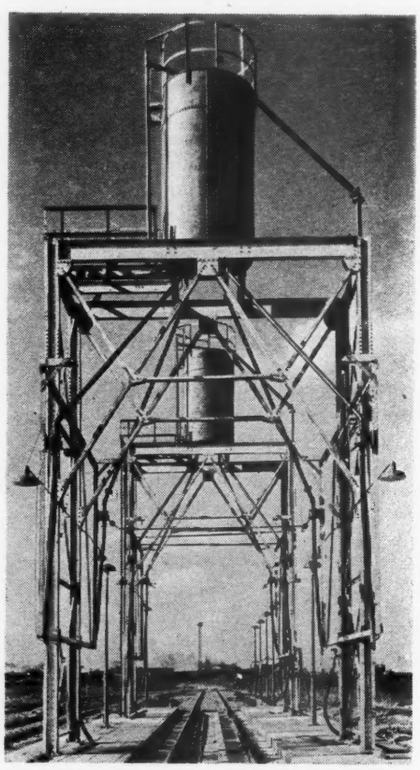
Supported directly over the fueling track on separate steel frames are two dry sand storage tanks, each with a capacity of 20 tons. Extending from each sand tank are four delivery pipes, two on each side of the track, each of which terminates in a length of flexible hose.

Arranged along one side of the platform are four fuel outlets, each consisting of a riser pipe with a gooseneck at the top to which is connected a length of hose about 15 ft. long, fitted at the end with a 1½-in. squeeze-type valve. Two of the fuel riser pipes are placed on the platform at the locations of supporting columns for the sand tanks, while the other two are located beyond the west end of the platform where they are fastened to and supported by tubular metal lamp posts on concrete pedestals. Arranged on each side of the platform are two Sellers high-pressure cleaning units for washing the running gear of locomotives.

Fuel for the Diesels is furnished from four 25,000-gal. horizontal steel storage tanks, placed nearby and surrounded by a concrete wall. To pump the fuel oil from tank cars into the storage tanks and from the latter to the locomotives, two 300-gal. per min. motor-driven pumps are located in a brick and concrete pump house adjacent to the storage tanks. As it is pumped from the storage tanks to the locomotive fueling rack, the oil is filtered by a 4-in. 10-element filter, and at the same time the quantity used is measured by a Bowser Exacto 3-in. oil meter having a capacity of 300 gal. per min. In addition, entrained air in the oil is removed by a de-aerating unit.

Sand Plant

The servicing layout for the Diesel locomotives includes a complete sand storage and drying plant that is highly automatic in operation. This includes a 750-ton open wood storage bin, from which the wet sand is transferred by a locomotive crane to a 70-ton concrete wet sand feeder hopper. From this hopper the sand is taken by a belt conveyor to a twin-unit steam sand dryer. As the sand is dried it falls by gravity into a gathering hopper, from which automatic gates control the flow over electrical vibrating screens into two sand drums. When these become full the sand is conveyed automatically by electric-eye controlled air pressure to the two overhead storage tanks at the fueling platform. After the wet-sand conveyors have been started by a push button, all operations involved in drying and elevating the sand proceed automatically. To assure a supply of sand at night, the plant is set in operation automatically when the tanks become half empty.



The outside servicing platform contains fueling and sanding outlets and truck-washing equipment

Car Washer

A Whiting car washer is so located on the lead track to the shop building that the locomotives are washed as they leave the fueling platform. The washer includes two vertical revolving brushes on each side of the track, and two vertical perforated spray pipes. Automatic control of the car washer is achieved with a combination line starter connected to a track relay so that when a locomotive shunts the track circuit by shorting the running rails, directly at the washer, a magnetic valve turns on the water and starts the four motors. When the locomotive has passed through the washer and the track circuit is again clear, the motors stop and the water is shut off. The ends of the locomotives and the vision windows are washed by hand.

Fire Protection

Fire protection is supplied by fire hydrants and hose lines, with nozzles of the fine-spray type for coping with oil fires, air-foam equipment and approved fire extinguishers, all of which are dispersed at strategic locations.

The new facilities at Marion were designed and constructed under the general supervision of J. W. Smith, chief engineer of the Erie, and C. H. Splitstone, assistant chief engineer; the design of the buildings was under the direct supervision of A. M. Knowles, then engineer of structures and now retired, and H. A. Dise, then assistant engineer of structures and now engineer of structures. Certain aspects of the design work were done in collaboration with C. F. McKinney, supervisor of tools and machinery, and G. E. McKinney, electrical engineer, representing W. Moore, superintendent of motive power, now retired. All work in the field was under the supervision of T. C. Wulling, resident engineer. The construction work was done under contract by the Hunkin-Conkey Construction Company, Cleveland, Ohio, except for the sand drying and handling facilities, which were furnished and erected by the Ross and White Company, Chicago, and the track work, which was carried out by company forces.

Proposed Gas Turbine Locomotives

As a result of experience on Swiss Federal Railways with a 2,200-hp. unit built in 1941, new designs developing from 2,500 hp. to 5,000 hp. are offered

At a meeting of the American Society of Mechanical Engineers, Metropolitan Section, Oil & Gas Power Division, held in New York May 23, 1946, Walter Giger, chief engineer, traction engineering department, Brown, Boveri & Company, Ltd., Baden, Switzerland, presented a paper on the design and performance of a 2,200-hp. gas turbine locomotive that was installed on the Swiss Federal Railways shortly after the outbreak of the war in Europe.† In his present paper Mr. Giger brings up to date the record of this first locomotive and offers for consideration proposed designs of gas turbine locomotives up to 5,000 hp.

*By WALTER GIGER**

THE original 2,200-hp. gas-turbine locomotive has covered a distance of approximately 60,000 miles since it was finished in 1941. It had to be taken out of service after its test runs due to lack of fuel oil. In May, 1943, is was possible to obtain oil for operation on a small scale on a non-electrified line of the Swiss Federal Railways. Only about 92 miles per day could be made and 22 stations had to be served on a local line. The average loading of the locomotive was about one-third what it should be.

Considering that the gas turbine locomotive is designed for long distance travel with relatively high average loads and few stops, this was about the worst service that could have been selected. However, there was no other line available, since all the heavy traffic main lines of the Swiss Railways are electrically operated and fuel oil had to be conserved. This service was a severe strain on the gas turbine plant, since the continuous starting and stopping meant continually varying temperatures in the turbine and the combustion chamber. The number of control functions thus performed would normally only be reached in long distance runs amounting to approximately 10-15 times the miles covered.

During this service in Switzerland, which had to be interrupted again after nine months of operation due to fuel oil shortage, the turbine was in operation approximately 1,620 hr. and it was started with the Diesel-engine group not fewer than 1,560 times. In October, 1945, the Swiss Federal Railways loaned the locomotive to the French National Railways and it is now operating daily on the line from Basle to Chaumont thus making one round-trip of about 350 miles per day. On these runs the fuel consumption is about 45 lb. per 1,000 ton-miles. This fuel consumption is entirely in line with the results of many operating cost studies.

These studies included the operation of gas turbine locomotives on American railroads where the average load which the turbine has to develop is higher than on the runs from Basle to Chaumont, or for that matter on most European runs. For such trains our calculations with gas temperatures of 1,110 deg. F at the turbine intake show a fuel consumption of approximately 30 lb. per 1,000 ton-miles.

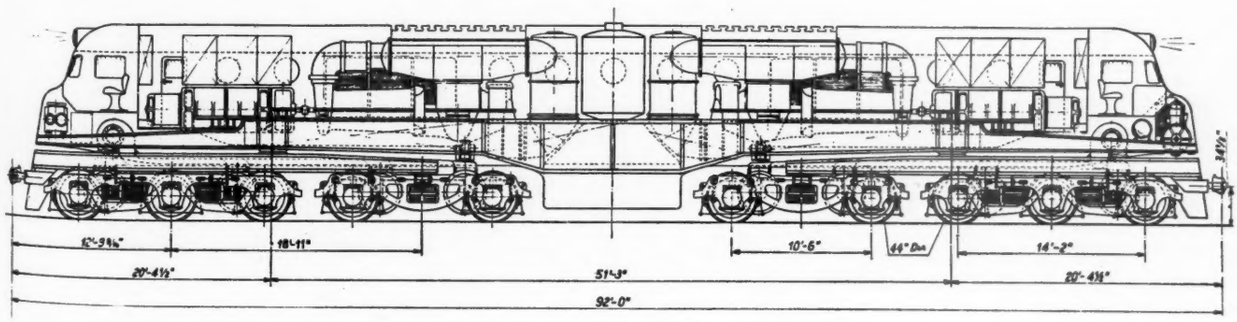
Considering the factors that enter into the economy of train operation, such as first cost, interest on investment, depreciation, maintenance, fuel and crew wage we estimated that the following savings per year would be reached for gas turbine locomotives as compared with Diesel-electric units (with 1,110 deg. F of gas temperature at turbine inlet):

(a) For a passenger train of 7 cars and 750 tons, with a 2,500-hp. locomotive, covering 187,000 miles per year in high-speed operations, approximately $10,000.

(b) For a passenger train of 14 cars and 1,450 tons, with a 5,000-hp. locomotive, covering about 240,000 miles per year in high-speed operations, approximately $20,000.

These figures were estimated with fuel oil costs of approximately 2.7 cents per gal. for bunker oil and about 4.5 cents per gal. for Diesel oil, or a ratio between them of about 3.5.

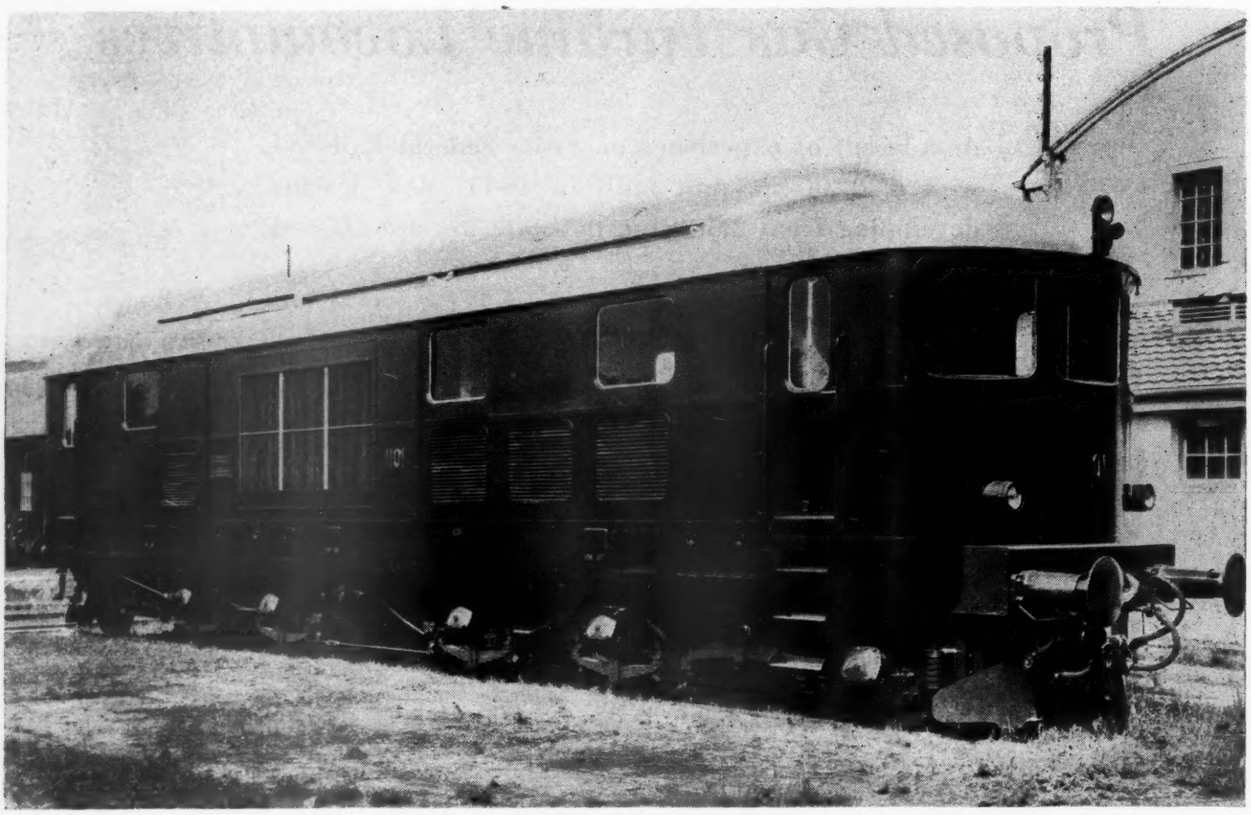
The 2,200-hp. gas turbine locomotive built by Brown, Boveri is the first of its kind. That company has built electrical equipment for over 2,000 locomotives. The electrical parts of this locomotive are similar to the traction equipment previously built and did not involve any special problems. A different situation was found with the gas turbine plant and special designs had to be developed to be able to arrange the necessary ma-



Elevation of a proposed 5,000 hp. locomotive design

* Chief engineer, traction engineering department, Brown, Boveri & Company.

† A description of this locomotive appeared in the Railway Mechanical Engineer for February, 1943, page 69.



The original Swiss Federal Railways 2,200 hp. gas turbine locomotive built by Brown, Boveri & Co., Ltd.; completed in 1941

chinery within the profile of the locomotive.

The locomotive is built for a maximum speed of 65 m.p.h. During test runs speeds of 80 m.p.h. were reached and the locomotive proved to be one of the smoothest running Swiss locomotives. The gas turbine and the compressor unit also lived up to expectations and no disturbances were encountered.

Efficiency at the Rail of Various Locomotive Types

Locomotive Type	Per Cent
Saturated steam, single expansion	5
Superheated steam, single expansion	7
Superheated steam, compound	8
Condensing steam turbine with electric transmission	8.5
850 I.hp. high-pressure steam, single expansion	10
Condensing steam turbine with gear transmission	10.2
850 I.hp. high-pressure condensing steam	12
Gas turbine with electric transmission	16
Diesel-electric locomotive	30

Some difficulties were experienced with the speed-control system of the gas turbine. In accordance with stationary practice on Brown, Boveri turbo-type machines the speed setting of the gas turbine is effected by an oil pressure system. This system was influenced by variations in the viscosity of the control oil due to changing outside temperatures. It was ultimately replaced by an electrically controlled system which worked satisfactorily.

Some difficulties also were encountered with the air preheater. Depending on the kind of oil used and of the combustion in the combustion chamber more or less soot was deposited on the air preheater tubes.

For the runs in France a very heavy oil is used. On one run a combustion control link broke with the result that there was a heavy soot deposit on the air preheater tubes. This led to a chimney fire in the preheater and some of its tubes burnt out. Design changes have been made so that such troubles will not occur in the future. If the proportion of combustion and cooling air is correct smokeless combustion is easily attained, and if this is the case less soot will be deposited.

The combustion chamber presented many difficulties. All of them can be solved if the proper heat-resisting materials can be obtained. This was not possible during the war, but we are confident that the remaining difficulties will soon be overcome.

At one time the toxicity of the exhaust gases was questioned. Careful tests were made by the Swiss government munitions section. These tests showed that the gas turbine locomotive exhaust contains the smallest amount of carbon monoxide of any thermal locomotive type used today. Gas turbine locomotives can therefore operate anywhere that steam or Diesel-electric locomotives are permitted, and with greater safety.

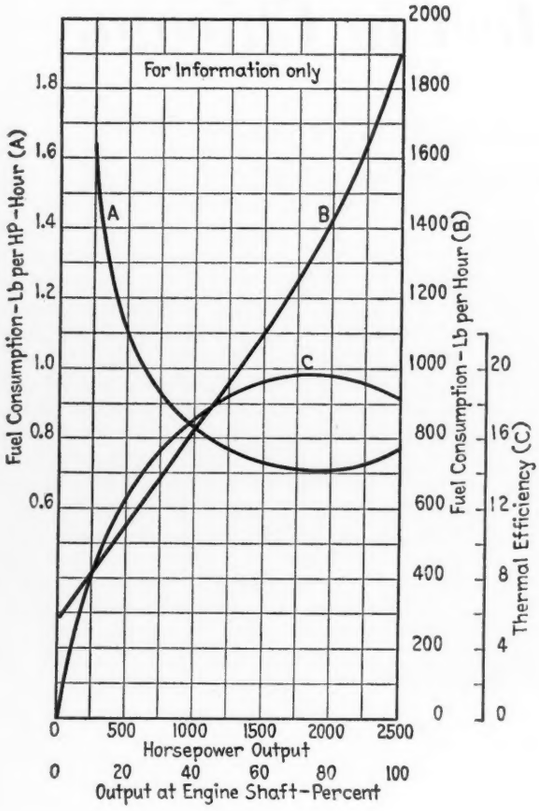
Improvements planned for the future include the operation of the turbine at higher temperatures, thereby improving the efficiency and output, if and when materials are available to do this with safety, or to improve the efficiencies of the turbine and the compressor, thereby gaining considerably in the total economy. Another important improvement would be the combustion of coal. Extensive research has been made by Brown, Boveri in this direction, but a practical solution has not yet been found.

Characteristics of 2,500-Hp. Gas Turbine Locomotive

Total weight in working order, lb.	338,000
Weight per axle, lb.	56,333
Tractive force:	
Starting, lb.	55,000
One-hour rating, lb. (at 27.5 m.p.h.)	27,300
Continuous rating, at 38.5 m.p.h., lb.	20,000
Maximum speed, m.p.h.	90
Weight of electrical equipment, lb.	76,600
Weight of thermal equipment, lb.	60,600
Weight of mechanical parts, lb.	146,200
Weight of fuel, water, sand, crew, etc., lb.	54,600

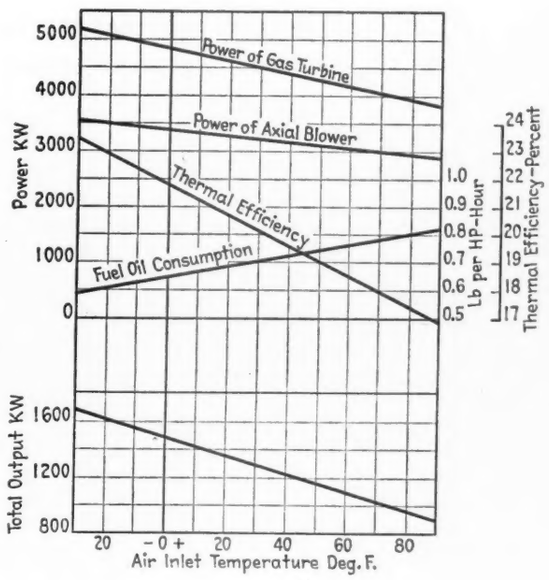
Consideration of New Designs

It is quite natural that the general arrangement of gas turbine locomotive will be similar to that of the Diesel-



Left.—Fuel consumption and efficiency at various output ratings—2,200 hp. locomotive

Below.—Relation of output, fuel consumption and thermal efficiency to air inlet temperature at various ratings



electric locomotive, the Diesel engine with auxiliaries being replaced by a gas turbine group consisting of a turbine, compressor, preheater and combustion chamber.

[In presenting his paper Mr. Giger showed slides of gas turbine locomotive designs of 2,500 hp., with four- and six-wheel trucks; a 4,000-hp. eight-wheel truck design and a 5,000-hp. twin-body-unit design with six-wheel trucks. This latter design is shown here in one of the drawings—EDITOR.]

A 2,500-hp. locomotive, for example, designed for a maximum speed of 90 m.p.h., is estimated to weigh approximately 360,000 lb. in working order (144 lb. per hp.). It also contains two steam boilers having a total capacity of 4,000 lb. per hr. and boiler feedwater tanks of approximately 3,000 gal. capacity. To be able to use this locomotive in both directions, when operating as a single unit, without turning it around, an operator's cab is included on the stub end.

The two-unit 5,000-hp. locomotive carries sufficient fuel oil for 10 hours operation of the turbines at full load and for about 7 hours full-load operation of the steam boilers. The starting tractive force of this locomotive is about 110,000 lb. and the one-hour rating is 55,000 lb. at 27.5 m.p.h.

During our various investigations of tractive-force requirements we often have come across conditions where high horsepower ratings are necessary. As a matter of fact most high-speed passenger and freight trains today, depending, of course, on their weight, ruling grade and speed, require from 4,000 to 6,000 hp. Power demands in the future will be even higher than these. The 2,500-hp. gas turbine unit mentioned above presents an ideal all-around locomotive for light service as a single unit or as 5,000-hp. or 7,500-hp. used in multiple-unit.

Studies undertaken resulted in the design and the subsequent construction of a 4,000-hp. gas turbine set which was recently finished and is now on test in our works. Built along the same principles as the 2,500-hp. unit but with many improvements, this new gas turbine set is expected to show an efficiency of approximately 22 per cent as against 19.6 per cent for the 2,500-hp. unit.

In a 4,000-hp. passenger locomotive equipped with this new turbine group, the generator group is gear driven and consists of four smaller generators assembled into one structure. The cab and underframe assembly rest on two eight-wheel trucks. All axles are motor-driven and there are no idling wheels. The estimated weight of this locomotive is approximately 440,000 lb. or 110 lb. per hp., and the weight per axle would be about 55,000 lb.

Being geared for a maximum speed of 110 m.p.h., this locomotive would develop approximately 75,000 lb. starting tractive force and the one-hour rating would be about 30,000 lb. at 40 m.p.h. At full load the fuel consumption would be approximately 2,600 lb. per hour. The fuel tanks have sufficient capacity for 13 hours full load operation or approximately 16 hours at 75 per cent of full load.

Cost studies were also made for this 4,000-hp. locomotive and, at the same fuel-oil prices previously mentioned with the ratio of 3 to 5 for Diesel and bunker oil, approximately $15,000 to $16,000 per year should be saved with a gas turbine locomotive as compared to a Diesel-electric unit of the same size.

GUIDE TO BRITAIN.—A new and modernized version of the Baedeker is being prepared by the Travel Association of Great Britain as part of its program aimed at attracting an annual $400,000,000 tourist trade. Edmund Vale, well-known writer and broadcaster, has been commissioned to conduct a historical and topographical survey of the country, to be published in a series of four-page loose-leaf folders, each dealing with a single town or district. Each will be prefaced with a large-scale sketch map, and will contain geographical and historical information as well as carefully checked details about sites of interest or particular beauty. Local residents well versed in the traditions of their sections will assist in compiling the material, which will require several years for completion.

Purchasing Agents Meet in Chicago

Spirited three-day meeting of National Association of Purchasing Agents discusses vital problems affecting industry

DESPITE uncertainties of travel, the thirty-first annual convention of the National Association of Purchasing Agents, held in the Stevens hotel, Chicago, May 27 to 29, was most successful. Indicative of the intense interest in the problems confronting purchasing officers was the registration of over 2,500 members and guests from all over the United States and Canada.

From the opening address of welcome by Mayor Edward J. Kelly of Chicago and the keynote address by Charles L. Sheldon, president of the N. A. P. A., the convention moved at a fast pace. Among the highlights were many interesting reports and addresses by prominent purchasing officers, leaders of industry and government officials; these included an address delivered via radio from Washington, D. C., by John D. Small, administrator of the Civilian Production Administration; "Convert Your Problems Into Opportunities," by Charles L. Sheldon, Hood Rubber Co.; "Buying Conditions Purchasing Agents Will Face in the Years Ahead," by Ray Haberkern, purchasing agent, R. J. Reynolds Tobacco Co.; "Management Problems During the Year Ahead as They Affect Purchasing," by W. R. Herod, president, International General Electric Co.; and "Escalator Clauses," by Fred A. Compton, purchasing agent, Detroit Edison Co.

Competition a Necessity

President Sheldon declared that, while the problems and emergencies of the present period may make advisable some restraints that affect the free play of competition, the solution of the economic and political problems affecting American industry will never be found without taking into consideration the well-established and amply demonstrated power of healthy industrial competition.

In discussing "Industry's Steel Needs," Hiland C. Batcheller, president, Allegheny-Ludlum Steel Corporation, asserted that the steel shortages would fast become a myth if the steel industry were permitted to operate without present restrictions. Order books today are watered, he said, but will dry up fast when the industry gets into production. Until that time some form of "share the steel" would be highly beneficial to everyone involved.

Mr. Batcheller stated that to assure quick deliveries even with peak demands, the steel industry planned to spend $327 million this year for new equipment. Several continuous mills for producing cold-rolled sheets and strip steel are included in this expansion program. However, he pointed out, "much of this program has been seriously delayed by strikes." The speaker said that the only effective way of raising wages is through efficiency gains and cost reductions that are passed along to the public in the form of more buying power per dollar—yet today organized labor is demanding the fruits of increases in productivity when the increases have not yet been realized.

Abundant Coal Supply

J. H. Price of Cabin Creek Consolidated Sales Co., Chicago, spoke on the "Future Outlook of Coal." Coal is available for all the nation's fuel needs for some thirty centuries, he said, recalling that coal mining started as a business in this country in 1730 and that the national output 100 years ago was only one million tons. In 1944, at the peak of our war effort, the nation's mines produced 620 million tons.

In present and future potential use bituminous coal is second to no other fuel, the speaker observed, and the nation's supply of coal may well be counted on to augment the diminishing supply of other sources of energy. Although there was a 14 per cent decrease in manpower, the 1944 coal output was 60 per cent more than in 1939, the last year unaffected by either war or defense activity. With reference to negotiations in Washington, he added that about 65 per cent of the cost of producing coal is the direct cost of labor.

Mr. Price emphasized the huge investments that the railroads have in facilities to haul coal, and stated that accordingly the railroads have built up an equity and interest in the future of coal as great, if not greater, than the operators of coal mines. In discussing the mine workers' demands he declared, "Naturally we are deeply concerned over all items causing an increase in production cost—whether these be clothed in the form of vacation pay, royalties, or actual wages and hours."

In an informal talk before the Fuel Oil Forum, Dr. Robert E. Wilson, chairman of the board, Standard Oil Co. of Indiana, Chicago, expressed confidence that there will be an adequate supply of all petroleum products for an indefinite period. He stated that increased costs of finding and developing crude oil production practically necessitated an increase in prices over the next few years. Although the costs of labor and materials used in refining had increased substantially, greater efficiency in the refining process and methods of distribution had tended to offset these cost increases during the last few years; however, he did not believe that this condition could continue indefinitely.

According to Dr. Wilson, heavy residual fuel oils are no longer an unavoidable by-product of refinery operations, because they can now be converted into gasoline by processes developed in recent years. Heavy fuel oil will continue to be available for all uses where cleanliness, labor-saving and greater output for a given size furnace will justify a reasonable premium over coal, but in most parts of the country will tend to be less closely competitive with coal in large power plant installations, especially those equipped with coal-pulverizing equipment.

Dr. Wilson stressed the great variation in stated requirements of fuel for various types of Diesel engines, or even of the same Diesel engines in the hands of different users. He also emphasized the importance of cooperative experimental work to determine the real service value of the different fuel properties. According to the speaker, the fuel oil shortage of the past winter was caused by failure of the Office of Price Administration to act on the oil industry's warnings as to the inevitable effects of a frozen price structure based on a period when it was desired to maximize gasoline production.

Coal Chemicals Expanding

H. V. Lauer, field supervisor of raw materials, Carnegie-Illinois Steel Corporation, Chicago, gave an address on "Coal Chemicals from the Steel Industry." According to the speaker, 25 years ago the number of such products known was somewhat over 3,000, but recent activity, especially in the organic research field, has increased this total yearly, and since the start of World War II interest has been growing in the recovery of new compounds. Carbazole is

an example of these recent developments; our investigators in Germany found that it was used there during the war to produce a new type of high melting resin. Although production was not large, it indicates that tar chemicals other than phenol and naphthalene have possibilities in this field.

Interest and research in the plastic field, which have continued to grow, particularly through the war period, have been felt especially in naphthalene. This is the basic raw material for the manufacture of phthalic anhydride which is used in producing the alkyd resins used in protective coatings. Tar acids, in addition to the synthesis of phenol from benzene, are the base for the phenol-formaldehyde resins whose applications are found in moldings and adhesives. In addition, other coal chemicals contained in coke oven gas in considerable amounts, which it is felt could be recovered economically, are cyanide and sulphur compounds which now go out either with the coke oven gas or with waste disposal products.

Increased Production Needed

Robert C. Kelley, director of purchases, Dresser Industries, Inc., Cleveland, Ohio, in addressing the association on "Successful Buying Policies in a Sellers' Market," sounded a thoughtful note of warning by saying, "Remember that sellers' markets end suddenly." According to the speaker, sometime within the next few years, when the productive facilities of this country are utilized to capacity, the present sellers' market will end before most of us are aware of it. He also declared that a sensible buying policy now will prevent a "bust" later.

The foundation to successful buying policies in a sellers' market, according to Mr. Kelley, lies in the following six points: (1) Buy sparingly for known requirements; (2) simplify and standardize; (3) use more substitutes; (4) buy government surplus; (5) remember sellers' markets end suddenly; and (6) watch for exceptions to the trend. One lesson that the war has brought home to all is that the way to economical production lies in long runs of standard materials, Mr. Kelley said in urging a greater amount of simplification and standardization. Greater exploration of substitute materials does not necessarily mean use of inferior products. With the technological advances which have occurred during the war, there are numerous materials pressing for entry into the market which will do the job better and cheaper than those formerly used.

In an address on "Materials Management Today," R. L. Van Cleve, general purchasing agent, Carnegie-Illinois Steel Corp., emphasized the need for additional standardization of specifications, and the necessity of maintaining an intelligent organization structure with qualified personnel to insure a capable, smooth-working and cooperative group.

Mr. Van Cleve said the problem in materials management is to place purchase orders with satisfactory sources of supply, and sufficiently in advance of actual requirements to maintain a reasonable inventory status and yet meet the delivery situation as it relates to the items of interest and the operating needs. While it is important not to tie up any more funds in inventories than necessary to insure orderly operation, maintenance and repair, the speaker warned that the availability of a commodity also depends on the situation at the plant manufacturing the item and its labor conditions.

Another important phase is the testing or trial of new products and materials, the development of special materials to meet specific needs, and in general, the importance of factual data. Since we are interested in making the most economic purchase, we are always looking for a better and higher standard. This attitude, according to Mr. Van Cleve, is not only good purchasing, but it promotes competition and stimulates development and progress.

Shortage of Raw Materials

In an address on industry's import needs H. N. McGill, president, McGill Commodity Service, Inc., Auburndale, Mass., stressed the need for supplies of shellac, varnish, gums, tin, copper, lead, and jute, and also the importance of trading with other countries in order to sell our manufactured goods and in turn buy the raw materials so vital to our national economy.

Stocks of lead and copper in producers' hands are only a fraction of normal complements, he said, but due to the higher world market and government ceilings in the United States, it is difficult to accumulate stockpiles of these commodities. Regarding our supply of tin, the speaker remarked that prior to the war this country was the principal consumer, using an average of 62,017 tons annually; after the outbreak of hostilities the major sources of supply were quickly cut off and domestic reserves dwindled to the irreducible minimum.

It is expected that approximately 58,000 tons of tin will become available this year. However, consuming schedules will rule on a higher plane once the strike issues are settled, and the goal is to maintain government stocks at the 30,000-ton mark by the end of the year.

In summing up industry's import needs, the speaker stated that the following points stand out conspicuously:

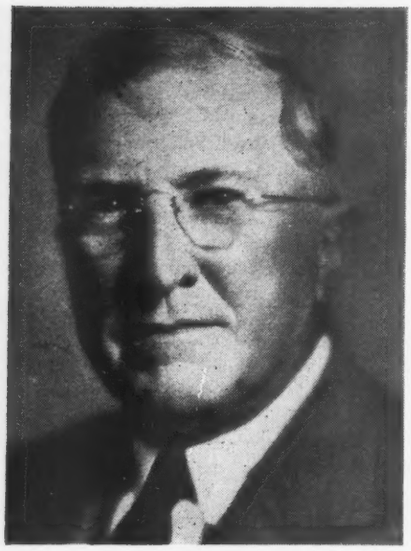
(a) Our natural resources have been used up at a sensational pace; (b) today the reservoir of replacement demand for all types of civilian goods is the highest known for a peacetime era; (c) several years will be required to establish a more normal supply-to-demand ratio from a world as well as a domestic standpoint, the rapidity of the shift to a more normal basis being contingent upon the volume of raw materials available.

* * *

Union Station, Montgomery, Alabama

Renovations completed recently include the enlarging of the lobby by removal of ticket office and news and tobacco counters to other locations, extension of the ceramic tile floor, installation of a public address system and equipment of lobby with fluorescent lighting. Re-arrangement of the station facilities made space for 14 additional benches, upping seating capacity to approximately 200.

N. & W. Names Jenks Chairman; Robert H. Smith Now President



William J. Jenks

ROBERT H. SMITH, vice-president in charge of operations of the Norfolk & Western since January 1, 1942, has been elected president and a director. He succeeds William J. Jenks, who has been elected chairman of the board.

Born in Baltimore, Md., in 1888, Mr. Smith received his early education at the Fort Collins (Colo.) high school and the Tome school at Port Deposit, Md. His many years of railroading—all of which have been spent with the Norfolk & Western—began in July, 1910, when he took a job as axeman and chainman in the road's engineering department at Roanoke, Va., while on vacation from Princeton university. Graduated in chemical engineering from Princeton in 1911, he worked as a masonry inspector and transitman in the engineering department from 1911 to 1913, when he was promoted to assistant roadmaster on the Radford division.

He became roadmaster in 1914, and was advanced to assistant superintendent of the Pocahontas division in 1917. Two years later he was transferred in the same capacity to the Radford division, where he was promoted to superintendent in December, 1922. In 1931, Mr. Smith became superintendent of the Eastern general division, and in 1934 he became superintendent of the Western general division.

Mr. Smith was appointed general manager in 1936, and in addition was advanced to vice-president in May, 1939, serving in those capacities until his promotion to vice-president in charge of operations.

Mr. Jenks, born in Wake County, N. C., on March 21, 1870, began his railway career in 1886 as a telegraph operator and agent on the Raleigh & Augusta Air Line, now a part of the Seaboard Air Line, and the Richmond & Danville, now part of the Southern. He joined the Norfolk & Western a year later, working as agent and operator at Ripplemead, Va. Six months later he was moved to Bramwell, W. Va., as an operator. In the fall of 1888, Mr. Jenks went to Bluefield, W. Va., and in November of the next year he was promoted to dispatcher. He became a night chief dispatcher in February, 1897, and in November of that year was advanced to chief dispatcher. He was made a car distributor in November, 1899.

Robert H. Smith

From September to December, 1901, Mr. Jenks was chief dispatcher of the Seaboard Air Line at Savannah, Ga. He was promoted to trainmaster in December, 1901, and from January, 1904, to March, 1908, served as the superintendent of various divisions.

In March, 1908, he returned to the Norfolk & Western as chairman of the car allotment commission, serving in this capacity until May, 1912, when he was appointed superintendent of the Pocahontas division. In December, 1912, he was promoted to general superintendent of the Western general division, with headquarters at Bluefield. He was appointed general manager of the road in January, 1918, and advanced to vice-president in charge of operations in May, 1924. Mr. Jenks was elected president on October 27, 1936, succeeding Arthur C. Needles, who had died on October 25 at his home in Roanoke.

At the end of 1943, when the railroads were taken over briefly by the national government, Mr. Jenks was appointed regional director of the Pocahontas region. Inducted into the army with the rank of colonel, he was one of seven railroad presidents in the country who were named regional directors.

The second largest of the Pocahontas bituminous coal carriers, the Norfolk & Western's principal source of revenue is the transporting of coal. In 1938 the road carried 31,389,000 tons of bituminous coal. The tonnage increased steadily each year thereafter until the peak of 54,401,971 tons was carried in 1943. The amount carried in 1945 was 47,791,643 tons.

Operating revenues totaled $94,862,000 in 1937, and had fallen to $77,163,000 by the end of 1938. In 1944, after six years of uninterrupted rises, operating revenues reached an all-time high of $159,599,000, decreasing to $144,864,000 in the following year. The ratio of total operating expenses to total operating revenues was 55.98 per cent in 1937, 60.09 per cent in 1938, 54.57 per cent in 1942, 56.20 per cent in 1943, 56.21 per cent in 1944 and 68.29 per cent last year.

Net income declined in 1941, despite the highest revenues since 1926, because of the greatly increased federal income and excess profits taxes. These taxes were $23,850,000 in 1941, compared with federal income taxes of $6,060,000 in 1939. Taxes were $41,850,000 in 1944, after a post-war credit refund. Earnings per share on N. & W. common were $22 in 1940, $19 in 1941, $15.36 in 1942, $15.58 in 1943, $15.15 in 1944 and $15.50 in 1945.

The operating efficiency of the Norfolk & Western has been greatly increased since the early 1920's as a result of improvement to its property, combined with a great increase in traffic. Among the substantial expenditures in recent years have been those for the construction of branch lines into undeveloped coal areas in order to maintain coal traffic which otherwise would decrease because of depletion. Investment in road and equipment increased from $318,000,000 at the end of 1921 to $541,555,895 at the end of 1945. Financing has been unnecessary because of the comparatively large earnings, in relation to the low ratio of debt, even equipment being purchased with cash. Earnings on the total investment have been modest, being only 4 per cent in 1945.

Radio Warning Tested on Seaboard

THE first road tests have been made recently on the Seaboard Air Line of the new radio device, known as Slowtone, which is designed to send a warning to approaching trains when any train has been stopped under unusual circumstances. This new Slowtone equipment, which was developed by the Bendix Radio Division of the Bendix Aviation Corporation, is intended as an adjunct to radio telephone train communication installations on the locomotives used on road trains. When a train makes an unusual stop, the engineman operates an electrical switch which causes a device to broadcast a special high-frequency Slowtone in the form of a series of high-pitched notes that will be received and reproduced in the loudspeakers on the locomotives of other trains within a range of several miles.

If the engineman is using his radio in conversation with some other party, he can readily recognize the Slowtone in contrast to voice. The new device is not intended to replace any safety equipment or practices now used on railroads but rather to supplement existing measures. During the past year the Seaboard, as well as numerous other railroads, has conducted extensive tests of radio telephone train communication made by the Bendix Corporation, but this Slowtone protection is a new adjunct first announced by Bendix on December 18, 1945, and the first road tests were made recently on the Seaboard, between Atlanta, Ga., and Birmingham, Ala. The radio apparatus for the train telephone and Slowtone warning operates at very high frequency on a wave length assigned for test purposes by the Federal Communications Commission.

The train-to-train tests of the radio communication system, including the Slowtone warning, were made in the vicinity of Rockmart, Ga., where the terrain is rough, so that the railroad line is characterized by heavy grades, deep cuts and numerous curves, with extensive heavily wooded sections near the tracks. These conditions are adverse to the use of radio.

With the Slowtone warning being broadcast from one locomotive and the other train approaching, the first distinctive warning was received at a distance of about 12 miles. Under extremely adverse conditions in deep cuts, at ranges of 12 miles down to about 5 miles, the Slowtone would fade, or might be "spotty." In general, the Slowtone warning was heard from one to three miles farther than conversation along the same route. The fading in dead spots was considerably less extensive in the Slowtone than in voice communication, due probably to its higher average modulation level.

Conversation Tests

Although these test runs were made primarily to test the Slowtone warning device, tests were made at the same time of the radio telephone communication between trains, between trains and fixed stations, and between the front and rear of a train. Three fixed stations were employed, located at Howells (near Atlanta), in the vicinity of Powder Springs, and at Dallas. The antennae in the first two locations mentioned were located on water tanks 100 ft. and 175 ft. in height, respectively, while at Dallas the antenna was installed on a pre-fabricated tower 100 ft. high. Although tests indicated somewhat better results from the Howells station, on the average in this type of terrain good telephone communication was provided for 15 miles from the fixed station, with no apparent decrease of signal in cuts over distances up to 12 miles.

When the two trains with equipped locomotives were approaching one another, telephone communication between them became possible at five miles. When one locomotive was in a deep cut, communication was lost for a short time at 2.5 miles. Telephone communication was maintained between the locomotive and caboose of the train at all times except when either end was in a tunnel.

The Slowtone warning is controlled from a small box mounted in the locomotive cab within reach of the engineman. At the lower left of the face of this box is a small red knob which normally is in the "off" position. When the engineman decides to send out the Slowtone warning, he turns this knob to the right to the "on" position, and it stays there until returned to the "off" position.

The emitted warning signal consists of a series of five consecutive tone pulses of about 0.12 second duration each. The five tones cover a total interval of about 1.5 seconds. The communication equipment then automatically returns to the receiving condition for 3.5 seconds, after which the series of five tone pulses is repeated. This cycle continues as long as the switch is in "on" position. During the off period between two series of pulses, incoming calls can be heard in the loud-speaker in the normal manner. The transmitter may be used for voice transmission while the Slowtone pulses are being sent out, this being done by the engineman pressing his "push-to-talk" switch and speaking into the microphone in the usual manner. In such instances, the warning signal pulses are still audible on the background of the voice being received on other locomotives or at wayside stations.

The demonstrations of this test installation of radio telephone train communication and Slowtone warning was made under the supervision of P. B. Tanner, of the Bendix Radio Division of the Bendix Aviation Corporation, with the cooperation of J. R. DePriest, superintendent telegraph and signals, and John Ryscuck, assistant electronics engineer, of the Seaboard Air Line.

Engineman operating knob to send Slowtone warning

Railroads Need Lots of New Capital

To pay high wages and hold competitive traffic they must make highest standards and practices general on all main lines; rate increase will help attract the necessary new money

By JOHN W. BARRIGER, III
President, Monon

EACH cent of the recent wage increases added $40,000,000 to the railroads' payroll. It follows that the 16 cents allowed by the arbitration and emergency boards represented $640,000,000 and the 2½-cent additional wage advance subsequently authorized, while couched in terms that sounded as though it was less than the price of a postage stamp or a newspaper, actually will add $100,000,000 to the cost of operating American railways—until the skill of American railway management brings expenses under effective control to keep them in proper balance with revenues.

When we apply the recent wage increases to the aggregate number of hours of labor utilized per year, in the past, to produce the transportation required of the railroads and similarly adjust the cost of fuel and material purchases for advances of the past year, the total additions to operating expenses virtually cancel current earning power. However, such statistical hari-kari reckons without the ingenuity of railway management.

Statistical measurements of maintenance during the depression decade of the 'thirties indicated serious deterioration of property which actually did not occur because the ingenuity of management utilized maintenance expenditures with greatly increased effectiveness. At the outbreak of World War II, statistical measurements of transportation capacity, based upon the best past utilization of cars and locomotives and track and terminal capacity, indicated an inability of the railroads to carry the peak loads that assuredly lay ahead. Once again it was proved that statistics measure only past standards and cannot gage the talents of management to attain higher ones. Today, when we contemplate the railway problem in terms of statistical measurement of recent increments to railway operating expenses we become alarmed, but when we relate them to the capacity of management there is sound ground on which to build our expectations for the railroads in post-war years.

Every business has a constant struggle to keep volume of output and selling prices of services or products in line with operating expenses which are determined by quantities of labor and materials used and unit prices paid for each. It is nothing new for railway management to find itself squeezed between these factors and it is not alone in its worries in this respect, as the first quarter income accounts of many industries will attest. The railway problem in this respect is only made to appear more difficult because its necessities are more widely publicized since the procedures through which its wages and selling prices are established are conducted in a gold-fish bowl.

I venture the optimistic opinion that with the assistance of the rate relief which the carriers expect of the I. C. C., income and outgo will soon be restored to correct relationships with one another. Investors can expect earning power of the carriers, measured in dollars of net railway operating income, to represent a fair return upon the capital which was used to create them. This will preserve and strengthen railway credit and allow individual companies to procure from their own resources and from investors the funds necessary to provide the improved plant and equipment required to produce competitively successful service and sell it profitably at competitively successful prices.

No Ceiling on Efficiency

The record of the century of American railway development has been the constantly advancing economy with which labor and materials have been utilized. If this curve had ever stopped rising, and so had reached a ceiling and stayed there, American railway progress would have ended and probably private ownership and operation of the carriers would have ended, too. Both are safe for the protection and development of this nation as long as railway management can push operating efficiency and service standards to still higher levels. These are the end result of progress in managerial technique and the advancement of physical and engineering standards of materials, equipment and facilities and the addition of new devices which avoid hitherto necessary operations or reduce the cost of such operations measured in consumption of labor and materials and fuel.

There probably never was a period in the history of transportation when there were more improvements and new devices available for incorporation in railway operation than now, and there probably never was a generation of railway managers more eager and competent to utilize their opportunities to improve standards and reduce unit costs of transportation. This certainly is an effective combination which insures success, subject to the availability of the Vitamin "C" of all private enterprise—*Capital.* During the decade of the thirties the railways suffered from a great deficiency of this Vitamin "C." Neither the railways nor any private enterprise can render effective and satisfactory public service without adequate and continuous dosages of it.

Capital is produced out of the earning power of corporations, which likewise creates credit. A corporation has credit when the public believes in its future sufficiently to entrust its money to it for use in improvement or expansion. Since corporate income is the sole source of credit and of capital, this earning power is the life-blood of business and must be protected or the enterprise will wither and die.

The financial results of the operations of the American railways over recent years have produced treasury cash available for capital purposes and have restored railway credit. Both will give the carriers access to those improvements and betterments which will enable them to keep the curve of operating efficiency mounting higher and, with the revenue assistance asked of railroad patrons, after securing necessary approval of the I. C. C., earning power can be conserved so that the supply of Vitamin "C"—capital—can be adequate through future years.

The railways represent an investment of $26 billion—and the good old-fashioned 100-cent gold dollars, not the ones of reduced purchasing power which we are using today. Viewed from every standard and requirement of the past, the railways are a magnificent transportation machine, but related to the reduced cost and improved service requirements

This article is adapted from a May 29 address to the Birmingham Traffic and Transportation Club.

of the future, they have many inadequacies.

A very much finer plant will be required to enable the railways in immediate future years to render the kind of service that will attract business while paying current wage rates and still leave a margin of operating profit commensurate with the capital and credit necessities of the railways.

Main line grades in excess of 0.5 per cent add more to railway operating expenses than high wage rates and "featherbed" rules and the barrier to the elimination of most of these is the supply of Vitamin "C." Curves which did not interfere with operation of trains at 45 to 60 m. p. h. went unnoticed up to within the past decade, but now constitute major impediments to the freight and passenger schedules which must soon be introduced. The increasing tempo of modern train operation makes non-interlocked railway grade crossings as out-of-date as a mud road, and signals must expedite and not merely protect train operation. With comparatively few exceptions, considering the country as a whole, railroad approaches to all cities, large and small, are littered with railway and highway crossings and a multitude of operating restrictions of many types and descriptions. These conditions seriously impede speed and flexibility of movement and dissipate the benefits of improved running over the rest of the line. Capital alone will correct these conditions.

While the *best* American railway standards and practices are very high and entirely adequate, *too small a proportion of the entire main line mileage is developed to be all-inclusive of these optimum conditions.* Solution of the railway problem necessitates that main line mileage be brought up to these standards except where mountains or other extraordinary physical obstacles prevent—and even in these circumstances, modern engineering opens up large vistas of improvement.

Post-war reconversion of railways requires: Easy grades and curves; rail of 112-lb., 131-lb. and 152-lb. section; signal systems which will permit train operation on all main lines, whether single, double or multiple track, to be made entirely independent of timetables and train orders; motive power of sufficient capacity to haul 5,000-ton freight trains at 35 m. p. h. average speed over divisions and 70 m. p. h. average terminal-to-terminal operation of 15-car passenger trains; continuous communication should be established between trains and dispatchers and between the locomotive and rear end of trains; all cars must be adequate for inclusion in trains of maximum weight and speed and carefully adapted to all of the reasonable necessities of patrons of the freight and passenger service. Terminals of locomotive runs should be the same as of trains and the intermediate servicing of motive power must be held within the time limits of stops for traffic purposes. A similar degree of improvement must follow in the facilities which the maintenance and the non-operating departments must use.

Such a prescription as this will make such great quantities of freight and passenger traffic immune to inroads of competitive transportation that the railways will always be assured of revenues adequate to provide the large and continuous dosage of Vitamin "C" which they will need each year to remain healthy throughout the future.

Lost Time to Be Made up

Fortunately, now, the railways have a sufficient supply on hand for current necessities and before this is exhausted, their own abilities in matters of expense control and plant and equipment improvement, and the expected wise cooperation of the Interstate Commerce Commission through Ex Parte 148 and 162, will provide the new quantities of Vitamin "C" required for future years.

Wars are great destroyers of life and property and disrupters of all of those ways of living which a peace-loving democratic people hold dear. On the other side of the coin, wars intensify technical progress through stimulating invention, improving and developing manufacturing processes and adding greatly to experience in organization. It is no mere accidental coincidence that long periods of accelerated industrial development in the United States followed the American Civil War and World War I, after the first painful readjustments of demobilization of armies and industry had been assimilated. The recent conflict compressed the normal technical and scientific and industrial progress of a decade or more into less than four years, while at the same time shutting off the access of individuals to important quantities of nearly all types of goods other than those needed for current subsistence. Ready-made markets have thereby been created which will permit peacetime absorption of the maximum capacity of American industry for some years to come.

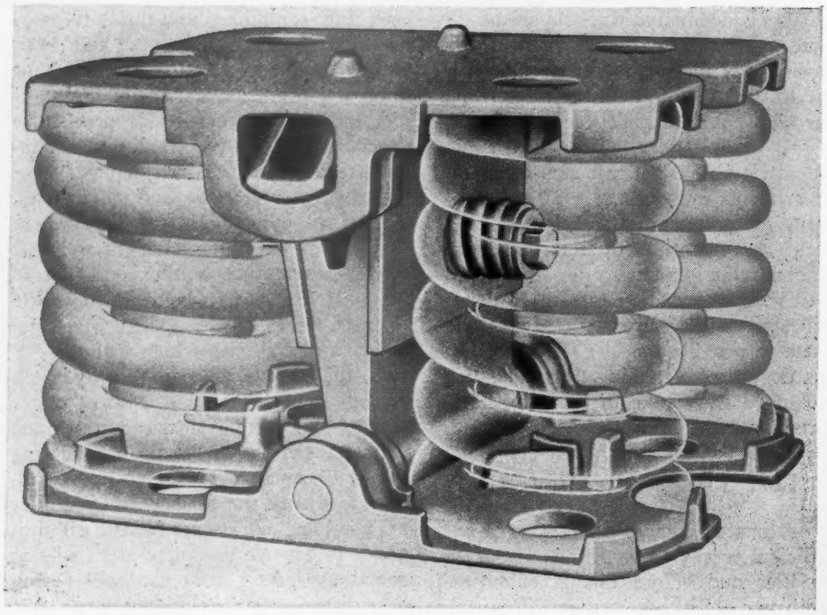
The business outlook in 1946 is entirely reversed from 1929 by reason of the opposite set of economic conditions. Then the average individual had bought heavily, i. e., was "long" on consumers and durable goods for present and prospective requirements and was "short" of money, usually being heavily in debt on account of these and other purchases in excessive relation to normal income. In 1946, individuals are "short" of goods and "long" of money. At that time new industries, methods and techniques had been fully capitalized and the initial momentum of their influence had been spent; now, there are myriad new or improved products and methods awaiting full exploitation by a peace-time economy. Obsolescence and undermaintenance have accrued in homes, businesses, communities and industries. There are dynamic forces everywhere that can create railway freight and passenger traffic that will exceed that of any past year except the peaks of World War II.

The railroad with which I am associated, the Monon, like all railways, is a curious mixture of some features representing superior physical conditions and many others which handicap rendering the best service at lowest cost. We intend to utilize the former as effectively as possible and proceed with all diligence to remove the latter as rapidly as sound operating economics will permit administering the relatively large dosages of Vitamin "C" which will be required to raise Monon's main lines and equipment to higher standards. We will attain them because the industrial growth of the great cities which form Monon's terminals and the increasingly rapid economic development of the South will produce Vitamin "C" in the large quantities which our railroad, along with many others, needs.

Snub-Up Snubber for Freight Car Trucks

A FREIGHT-CAR truck snubber, recently developed and placed on the market by the Railway Truck Corporation, Chicago, embodies the unique principle of snubbing on the upward instead of the downward stroke and thus enabling road shocks to be cushioned with full and free spring deflection. Damping the rebound tends to prevent bouncing and the build up of harmonic oscillations which cause heavy shocks and damage to equipment, lading and the track structure. The new snubber and nest of four springs are assembled as a complete unit.

The Snub-Up snubber is relatively simple in design with a minimum number of working parts. The top spring plate is connected to two spring-steel wear plates which bear against the sides of a V-shape friction wedge, the thin end of which is trunnioned to the bottom spring plate. Each side of the wedge slopes at an angle of 4 deg. from the vertical and the total area of contact of the two wear plates and wedge is 60 sq. in. The spring-steel wear plates are held against the wedge by two wedge springs and a bolt applied horizontally through the wear plates and wedge. The



Snub-Up snubber designed for application with the spring nest as a complete assembled unit in freight-car trucks

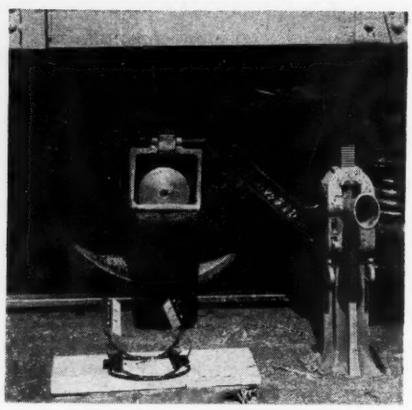
frictional pressure of the wear plates on the wedge decreases as the springs are compressed and increases on the rebound. The snubber is designed to take either standard or long-travel truck springs.

The general practicability of the Snub-Up snubber design has been demonstrated in severe static and bounce tests conducted at the A. A. R. draft-gear testing laboratory, Purdue university. The device is now being tested in road service on a number of private and railroad-owned freight cars of different types. Some of the snubbers have been in service two years without excessive wear.

Robot Packing Retainer

THE Robot journal-box packing retainer, recently developed by the Chicago Freight Car & Parts Co., Chicago, is designed to provide a reliable mechanical means to hold packing away from the brass at all times; keep the journal clean, from the packing line to the brass; and provide a clean film of oil necessary to proper lubrication.

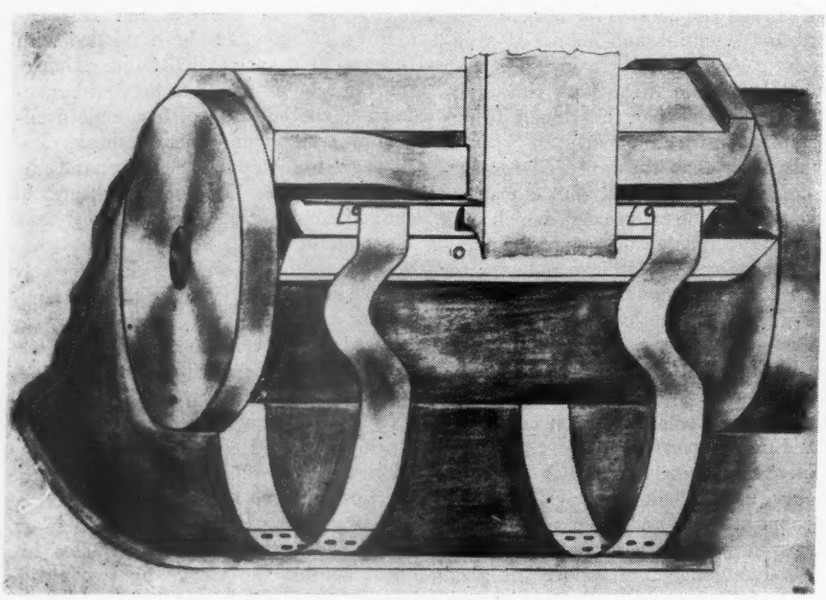
The Robot retainer consists of a flexible tempered spring-steel frame, equipped with two Bakelite laminated brushes, one on each side of journal, which are slidably attached to the retainer frame for necessary lateral movement. The normal position of brushes is about 45 deg. in relation to the side walls of the journal box and these brushes maintain a steady pressure of about 4 lb. per brush against the journal —enough to hold packing strands, but not enough to break the oil film which passes upward to the brass. The flexibility of the spring-steel frame is such that the retainer may be easily applied to or removed from a journal box. When in the box, it does not interfere with normal journal-box servicing and is not subject to damage by packing irons.



Robot retainer (on block) ready for application in a journal box

Advantages claimed for the Robot retainer include the elimination of time spent in adjusting journal-box packing in terminals, which amounts to at least 50 per cent of the time consumed inspecting or servicing trains; time consumed in jacking journal boxes in yards to remove brasses due to waste grabs; delays to trains due to setting out cars on account of hot boxes caused by waste grabs; and cut journals caused by waste grabs. This retainer is said to extend the average service life of the brass at least 100 per cent and result in increased service life of the packing, which will not be cut up into short strands by the use of packing irons.

Tests to determine the efficiency and potential service life of the Bakelite laminated brushes indicate that these brushes serve to distribute the oil film evenly along the full length of the journal and at the same time allow a heavy oil film to pass, thereby constantly maintaining a surplus of oil in the oil groove along the edge of the brass and providing lubrication uninterrupted by waste grabs. With this full lubrication, the amount of wear on the brush contact edges is practically negligible and long brush life is assured.



Phantom view of journal box with Robot packing retainer in place

GENERAL NEWS

Four Months Deficit Totaled $6,000,000

Net railway operating income for the same period was $118,834,374

Class I railroads in the first four months of this year had an estimated deficit, after interest and rentals, of $6,000,000, as compared with a net income of $196,860,976 in the corresponding period of 1945, according to the Bureau of Railway Economics of the Association of American Railroads. The four-months' net railway operating income, before interest and rentals, was $118,834,374, compared with $344,945,307 in the same period last year.

April's estimated results show a deficit, after interest and rentals ,of $21,300,000, compared with a net income of $55,557,900 in April, 1945, while the net railway operating income for that month was $10,127,739, compared with April, 1945's net railway operating income of $95,065,326. In the 12 months ended with April, the rate of return averaged 2.26 per cent, compared with 3.93 per cent for the 12 months ended April 30, 1945.

Gross Down 20 Per Cent—Gross in the four months totaled $2,432,814,881 compared with $3,054,808,819 in the same period of 1945, a decrease of 20.4 per cent, while operating expenses amounted to $2,076,267,783 compared with $2,105,579,731, a decrease of 1.4 per cent. Operating results in April, according to the A. A. R. report, were affected by the coal strike and the railroad wage increases.

Sixty-four Class I roads failed to earn interest and rentals in the first four months, of which 28 were in the Eastern district, nine in the Southern region and 27 in the Western district.

Class I roads in the Eastern district in the four months had an estimated deficit of $33,000,000 compared with a net income of $80,295,454 in the same period of 1945. For April alone, their estimated deficit was $22,000,000, compared with a net income of $26,905,905 in April, 1945.

The same roads in the four months had a net railway operating income of $20,717,993, compared with $146,027,725 in the same period of 1945. Their net railway operating deficit in April amounted to $8,400,168, compared with a net railway operating income of $45,488,730 in April, 1945.

Gross in the Eastern district in the four months totaled $1,064,077,500, a decrease of 19.1 per cent compared with the same period of 1945, while operating expenses totaled $948,708,868, a decrease of 2.5 per cent.

In the South—Class I roads in the Southern region in the four months had an estimated net income of $7,000,000 compared with $33,575,066 in the same period of 1945. For April, they had an estimated net income of $500,000 compared with $7,027,235 in April, 1945. The four-months' net railway operating income in the Southern region was $27,717,438, compared with $55,278,931 in the same period of 1945. The net railway operating income in April amounted to $4,987,571, compared with $12,730,456 in April, 1945.

Operating revenues in the Southern region in the four months totaled $361,118,401, a decrease of 19.8 per cent compared with the same period of 1945, while operating expenses totaled $294,990,828 or an increase of 3.2 per cent.

Class I roads in the Western district in the four months had an estimated net income of $20,000,000 compared with $82,990,456 in the same period of 1945. For April they had an estimated net income of $200,000 compared with $21,624,760 in April, 1945.

Those same roads in the four months had a net railway operating income of $70,398,943 compared with $143,638,651 in the same period of 1945. Their net railway operating income in April amounted to $13,540,336 compared with $36,846,140 in April, 1945.

Gross in the Western district in the four months totaled $1,007,618,980, a decrease of 21.8 per cent compared with the same period of 1945, while operating expenses totaled $832,568,087, a decrease of 1.7 per cent.

CLASS I RAILROADS—UNITED STATES

Month of April

	1946	1945
Total operating revenues	$566,701,500	$778,572,290
Total operating expenses	508,097,480	531,487,425
Operating ratio—per cent	89.66	68.26
Taxes	36,010,093	135,209,861
Net railway operating income (Earnings before charges)	10,127,739	95,065,326
Net income, after charges (estimated)	Def 21,300,000	55,557,900

Four Months Ended April 30, 1946

Total operating revenues	$2,432,814,881	$3,054,808,819
Total operating expenses	2,076,267,783	2,105,579,731
Operating ratio—per cent	85.34	68.93
Taxes	190,762,670	545,810,822
Net railway operating income (Earnings before charges)	118,834,374	344,945,307
Net income, after charges (estimated)	Def 6,000,000	196,860,976

Anti-Strike Program Trimmed by Senate

President's bill comes back to House with draft provision removed

Toning down by the Senate of President Truman's proposed anti-strike legislation; continued controversy over whether or not the May 25 capitulation of A. F. Whitney, president of the Brotherhood of Railroad Trainmen, and Alvanley Johnston, grand chief engineer of the Brotherhood of Locomotive Engineers, was known at the White House before the President went to Congress at 4 p.m. on that day to deliver his message calling for such legislation; and failure of a Presidential order creating an emergency board to halt the walkout of B. of R. T. and B. of L. E. members on the Hudson & Manhattan comprised this week the main outlines of the nationwide strike's aftermath.

As noted in the *Railway Age* of June 1, the House followed through promptly after listening to the President's May 25 address, passing H. R. 6578, the bill embodying his legislative proposals, which had been introduced by the majority leader, Representative McCormack, Democrat of Massachusetts. In the Senate, however, immediate action was blocked on the similar bill, S. 2255, which had been introduced by Majority Leader Barkley, Democrat of Kentucky.

What Truman Asked—As proposed by the President and passed by the House, the legislation would be "temporary," effective until six months after the official end of the war. Among other things, it provided that after the President had taken over a struck plant or facility and declared a "national emergency," he should call upon all employees to return to work and upon employers and employee representatives to take "affirmative action" to recall the employees. The bill would have provided further for the drafting into the Army of employees who refused to return to work, the draft to extend also to officers of the employing company or of the labor organization representing the employees.

Other provisions would have deprived employees refusing to work for the government of their seniority right and of the protection of federal labor laws; authorized the President to fix wages for the period of government control; and diverted any profits made during such period into the federal treasury. Injunctions might be sought by the government to secure compliance and there were criminal penalties for violations.

Before passing the bill on May 31, the Senate modified the House-approved ver-

sion to eliminate provisions authorizing the drafting of labor and depriving striking employees of their seniority rights. It also removed the provision which would have diverted profits during government control to the federal treasury. The bill then went back to the House, but it had not bten called up there when this issue went to press. Meanwhile Congress has passed and sent to the President the so-called Case bill. This would apply to industry generally procedures like those of the Railway Labor Act, which until recently enjoyed a favorable reputation as a strike preventer.

The President defended his labor-draft proposal at a May 31 press conference when he likened it to a situation wherein a county sheriff would have power to call upon citizens to serve as deputies in a time of emergency. Meanwhile the President had no comment when asked what he thought of an assertion, attributed to B. of R. T. President Whitney, that the President had signed his political death warrant by his actions on the rail strike. Mr. Truman replied that he did not read Mr. Whitney in response to another question asking if he had seen the text put out by the B. of R. T. president of the telephone conversations he and Grand Chief Engineer Johnston of the B. of L. E. had with the President and Administration advisers on May 18, the day on which the strike was postponed for five days.

Mr. Whitney was one of numerous speakers at an open-air union meeting in New York last week, the purpose of which was to attack President Truman for urging legislation intended to give him a "veto power" over certain union activities. On that occasion the B. of R. T. head outlined his version of the activities that had immediately preceded the 5-day postponement of the strike and the negotiations that went on during that period.

Morse Sees a Woodpile—The controversy over whether or not President Truman knew the strike had been settled before he received in the House the announcement of the settlement, which he interpolated in his May 25 message to Congress, culminated this week in the introduction by Senator Morse, Republican of Oregon, of Senate Resolution 278 calling for an investigation of the matter by the Senate committee on education and labor. During debate on the anti-strike legislation, Senator Morse had called the President's action "one of the cheapest exhibitions of ham acting I have ever seen, because he knew full well, before he went to the rostrum, what the position of the American railroad workers was." Later on Senator Barkley presented "a chronological history" of the wage negotiations as supplied by Dr. John R. Steelman, labor adviser to the President, in order to show "that the statement made by the Senator from Oregon is utterly without foundation."

The Morse resolution would direct the Senate committee on education and labor "to conduct an investigation forthwith of the events of Saturday, May 25, and prior thereto leading up to the settlement of the railroad strike, said investigation to include an investigation of all charges that the Administration knew or should have known several hours before the President's speech that the strike would not continue after 4 p.m." It would further provide that the investigation include the examination under oath of not only the representatives of the railroad brotherhoods but also of the President's advisers and such members of Congress as well as others "who can offer evidence based on their knowledge of the surrounding facts and circumstances or events that occurred on Saturday, May 25, and prior thereto in relation to the railroad strike."

In offering the resolution, Senator Morse called it his answer "as to who is telling the truth" in regard to the settlement. "I am ready," he added, "to prove my charge that the President did not fulfill his clear obligations to the public when he made his speech on Saturday, May 25, 1946, in that he did not inform them that there was no danger of a railroad strike after 4 p.m., and that fact was well known by his advisers before noon on Saturday."

As noted elsewhere herein, the H. & M. strike which came despite the creation of an emergency board to consider the dispute, got under way at 4 a.m. May 30. President Truman had issued the order creating the emergency board on the afternoon of the 29th and the order had been transmitted to the parties by 8 p.m. on that day, according to advices received at the National Mediation Board. There was no record at N. M. B. of any previous case wherein the appointment of an emergency board had failed to delay a strike until the Railway Labor Act's section 10 procedures had run their course.

Panama Limited Speeded by I. C.

The "Panama Limited," Illinois Central streamliner between Chicago and New Orleans, La., was speeded 1 hour, effective June 2. Under the new schedule the train departs from both terminals at 4:30 p.m., and arrives at the opposite terminals at 9:30 a.m. the following day. To and from St. Louis, connecting service leaves at 6:30 p.m., and arrives at 7:38 a.m. The new 17-hr. schedule between Chicago and New Orleans and 15-hr. time between St. Louis and New Orleans is described as the fastest rail time in history between these points.

T. P. & W. Operations Restored East of Peoria Yard, Ill.

Following a successful test run of a freight train from Peoria Yard, Ill. (E. Peoria), to Enright and return on May 31, daily except Sunday train operation on the Toledo, Peoria & Western between Peoria Yard and Effner, Ind., was resumed on June 3. Effective that date the road's embargo on freight traffic moving via its line was amended to permit acceptance of shipments originating on, or destined to, points on that portion of the line, provided they are routed via the proper junctions. For the present, overhead traffic will not be handled. The road is also planning to reopen that portion of the line west of Peoria yard, and hopes to resume full service at an early date.

Operations on the T. P. & W. have been at a standstill as a result of a labor dispute since it was removed from federal control on October 1, 1945. Prior to that time it had been operated by the federal government, commencing March 22, 1942. An attempt to operate a freight train on February 6 of this year resulted in the fatal shooting of two pickets during a gun battle with company guards at Gridley, Ill. Accused of manslaughter, the four guards involved were acquitted by an Illinois Circuit Court jury on May 24.

The labor dispute, which resulted in federal seizure of the road in 1942 and led to complete cessation of operations in 1945, is said by the road to be the result of an attempt of the Brotherhood of Locomotive Firemen and Enginemen and the Brotherhood of Railroad Trainmen to impose "standard" working rules on the property in place of those previously in force, and has been accompanied by numerous acts of violence over a period of several years.

Annual Meeting of Accounting Division, A. A. R.

The annual meeting of the Accounting Division, Association of American Railroads, will be held at the Mount Washington Hotel, Bretton Woods, N. H., June 18 to 21, inclusive, as scheduled originally, Secretary E. R. Ford announced in a June 3 notice to members. The notice stated that the previous action of the general committee in recommending postponement of the meeting had been rescinded.

L. J. Tracy, controller of the Union Pacific and chairman of the Division, will preside at the meeting where addresses will be delivered by Laurence F. Whittemore, president, Federal Reserve Bank of Boston; James G. Lyne, assistant to editor, *Railway Age;* Colonel Robert S. Henry, assistant to president, A. A. R.; and E. H. Bunnell, A. A. R. vice-president in charge of the Finance, Accounting, Taxation and Valuation Department.

Pettengill Says Truman Has Taken the Wrong Way

No one labor union should have the power of industry-wide collective bargaining, Samuel B. Pettengill, former congressman from Indiana, told a radio audience in his recent discussion of the railway strike, broadcast on the "America's Future" program of the American Broadcasting Company. But, he continued, it is not fair to put all the blame for the abuse of such power on the unions.

"By previous actions the administration had encouraged the men who struck to pursue the course they did," he declared, and their strike was "wholly within the law" except for the fact that the President had "seized" the railroads, under his wartime powers. The government was at fault as well as the employees, he continued, because, in recent years, "it has done two things: It has built up the power of unions by promoting industry-wide collective bargaining; and, second, it has failed to back up the decisions of its own fact-finding boards, but, instead, has overruled these boards, thus encouraging the unions to make further demands."

"If this practice is to keep on, union labor power will move more and more out of the control of moderate men, and more and more into the hands of ruthless and reckless men," Mr. Pettengill emphasized. "This failure to back up decisions made by government boards has made a joke of the

Railway Labor Act, which many have believed was a model for all labor legislation. It has made a joke of Congress, which passed the Railway Labor Act. It has made a joke of the millions of our people who want to work and earn their daily bread, without interruption.

"This whole sorry business traces back to a slow disintegration of Constitutional principle. It was decided by the wise men who founded our republic that it is the business of government to govern; to act as the impartial umpire under its own just laws; to take neither the side of capital nor the side of labor; to set up impartial courts or boards to prevent what Federal Judge Knox has called 'the law of tooth and fang,' and then place the power of government behind the decisions made by its own authority."

President Truman's emergency recommendations do not meet the situation, Mr. Pettengill said in concluding the broadcast. "The solution of the problem is to decentralize the power of the labor unions. No two men—or, as in the case of the coal strike, no one man, or any number of men—should ever have been put in the position to take this nation by the throat. Instead of building *up* the power of government over huge labor unions—which is the road to fascism—and rule by bayonets—we should build *down* the power of huge labor unions over government."

Clement Named C. E. D. Trustee

The Committee for Economic Development—organization of industrial leaders whose goal has been the maximization of post-war production and employment in private enterprise—has added 53 names to its list of trustees, of which it already had 26. The only railroad man among the number is M. W. Clement, president of the Pennsylvania. Paul G. Hoffman, president of the Studebaker Corporation, is chairman of the C. E. D. board.

In announcing the enlargement of its board of trustees, Mr. Hoffman revealed that the C. E. D. considers it has accomplished its task of fostering the rapid conversion of American industry from war production to peace production and that it will now concentrate upon its "second objective"—the creation of an "economic climate favorable to the attainment and maintenance of high productive employment." To this end the C. E. D. research division, which heretofore has been working on "transitional problems," will now turn its attention to answering the question: "What can and should a government of a free people do to promote national prosperity?"

A. S. T. M. Annual Meeting June 24-28, at Buffalo

Twenty-four technical sessions have been arranged for the presentation of more than 150 technical papers and reports, by authorities in the field of materials and research, at the forty-ninth annual meeting of the American Society for Testing Materials, to be held at the Hotel Statler, Buffalo, N. Y., during the week beginning June 24. In addition to the intensive technical program set up, which includes several symposiums and a large number of reports of general or specific interest to railway men, there will be in progress throughout the week the society's seventh exhibit of testing apparatus and related equipment, and a photographic exhibit on the theme, Materials Testing and Research.

Freight Car Loadings

Loadings of revenue freight for the week ended June 1 totaled 626,885 cars, the Association of American Railroads announced on June 6. Though the week included the Memorial Day holiday, loadings were nevertheless up 55,311 cars or 9.7 per cent from the previous week which included the two day strike period. As compared with the corresponding week last year the June 1 week's loadings were down 211,001 cars or 25.2 per cent, while they were 183,813 cars or 22.7 per cent below the comparable 1944 week.

Loading of revenue freight for the week ended May 25 totaled 571,574 cars, and the summary for that week as compiled by the Car Service Division, A. A. R., follows:

Revenue Freight Car Loading

For the Week Ended Saturday, May 25, 1946

District	1946	1945	1944
Eastern	111,165	163,604	161,058
Allegheny	108,749	190,374	199,519
Pocahontas	48,644	56,043	56,918
Southern	91,472	130,192	123,425
Northwestern	76,670	132,658	133,295
Central Western	87,565	132,272	122,023
Southwestern	47,309	77,610	72,583
Total Western Districts	211,544	342,540	327,901
Total All Roads	571,574	882,753	868,821
Commodities:			
Grain and grain products	34,905	53,562	41,125
Livestock	10,120	13,744	14,110
Coal	120,366	168,324	181,334
Coke	3,619	15,345	14,957
Forest products	32,394	44,537	43,622
Ore	28,641	73,663	82,741
Merchandise l.c.l.	91,951	108,801	105,232
Miscellaneous	249,578	404,777	385,700
May 25	571,574	882,753	868,821
May 18	688,240	868,914	870,075
May 11	684,942	838,764	867,182
May 4	671,311	866,034	835,538
April 27	659,952	899,950	850,441
Cumulative Total, 21 weeks	14,953,178	16,912,030	16,946 315

In Canada.—Car loadings for the week ended May 25 totaled 60,948 cars, as compared with 66,426 cars for the previous week and 70,427 cars for the corresponding week last year, according to the compilation of the Dominion Bureau of Statistics.

Totals for Canada:	Revenue Cars Loaded	Total Cars Rec'd from Connections
May 25, 1946	60,948	24,979
May 26, 1945	70,427	35,434
Cumulative Totals for Canada:		
May 25, 1946	1,385,960	713,507
May 26, 1945	1,399,938	777,276

April Truck Traffic

Motor carriers reporting to the American Trucking Associations transported in April 1,999,456 tons of freight, an increase of 5.3 per cent over the 1,898,111 tons transported in March and an increase of 1.0 per cent over the April, 1945, total of 1,980,162 tons. The A. T. A. index number, based on the 1938-40 average monthly tonnage of the reporting carriers, was 186.5.

The foregoing figures, according to the A. T. A. statement, are based on reports from 219 carriers in 43 states. Approximately 34 per cent of all tonnage transported during April was hauled by general freight carriers. The volume in this category increased 5.3 per cent over March and 2.2 per cent over April, 1945.

Transportation of petroleum products showed an increase of 4.8 per cent over March and a decrease of 7.8 per cent below April, 1945, while iron and steel traffic showed an increase of 16.2 per cent and a decrease of 1.2 per cent, respectively. Tonnage in the transportation of miscellaneous commodities disclosed a decrease of 2.9 per cent below March but an increase of 1.3 per cent over April, 1945.

Faster Coast-to-Coast Service

A new through sleeping car service between New York and Los Angeles was inaugurated June 2 by the Pennsylvania, in conjunction with the Rock Island and Southern Pacific. On the same date, schedules for other Pennsylvania through coast-to-coast sleeping cars were quickened by as much as 14½ hours, the railroad announced.

The additional New York-Los Angeles through service operates via the Golden State Route, serving such intermediate points as El Paso, Tex., Tucson, Ariz., Phoenix and Palm Springs, Cal. It will bring to five the number of through coast-to-coast sleeping car services operated out of New York by the Pennsylvania.

The car leaves New York at 11:45 p.m. in the "Golden Arrow," and is switched to the "Golden State Limited" at Chicago, with arrival at Los Angeles at 8:45 p.m. the third evening. Eastbound, departure from Los Angeles in the "Golden State Limited" is at 11:15 a.m., with arrival at New York on the "Broadway Limited" at 8:30 a.m. the third morning. Operating on alternate days beginning June 2, the car offers bedroom, compartment and drawing room accommodations.

New schedules of present coast-to-coast cars, effective June 1, shorten the New York-Los Angeles run via the Overland Route by 14 hours, 5 minutes westbound and 14 hours, 30 minutes eastbound. The car departs from New York daily in the "General" at 3:40 p.m., with arrival at Los Angeles at 10:20 a.m. the third morning. The New York-San Francisco through car schedule via the Overland Route has been reduced by 14 hours westbound and 12 hours, 30 minutes eastbound. It leaves New York daily in the "Manhattan Limited" at 6:45 p.m., and arrives in San Francisco at 2:20 p.m. the third day. The New York-Los Angeles daily through car via the Pennsylvania and Santa Fe is 1 hour, 50 minutes faster westbound, with no change in departure time from New York. The schedule of the New York-San Francisco through car operating on alternate days via the Exposition Flyer Route has not been changed. The Pennsylvania also inaugurated a new fast through sleeping car service between Washington and Los Angeles via the Overland Route on June 1, operating on a 68-hour schedule at no extra fare.

Through sleeping car service between Washington and San Francisco was inaugurated June 1 by the Baltimore & Ohio, Chicago & North Western, Union Pacific and Southern Pacific. From the east the car moves on the B. & O.'s "Shenandoah," leaving Washington at 11:45 p.m. and arriving at Chicago at 3:30 p.m. the next

day. Leaving Chicago at 9:15 p.m. that day, the car travels on the "Pacific Limited," arriving at San Francisco at 7:50 a.m. the fifth day.

The same service eastward was inaugurated from San Francisco on June 2 on the eastbound "Pacific Limited" leaving at 8:00 p.m. and arriving at Chicago on the fourth day at 8:30 a.m. Leaving Chicago at 10:40 a.m. that day on the B. & O.'s "Washington Express," the car arrives at Washington at 7:20 a.m. the fifth day.

Westbound reservations for space in the car are limited from Washington to Ogden, Utah, and points west, and eastbound reservations are limited from San Francisco to points on the B. & O. served by the "Washington Express" until 48 hours before the departure of the trains, but after that space may be reserved and sold to all destinations between San Francisco and Washington.

Hudson & Manhattan Strikers Boycott Emergency Board

For the third time in a few weeks, operation of Hudson & Manhattan trains between New York and Newark, N. J., was suspended May 30, as the result of a strike of employees belonging to the Brotherhood of Railroad Trainmen and Brotherhood of Locomotive Engineers. The strike was called, according to the unions, because the company had "refused to abide by wage increases recommended by President Truman."

The railroad handles passenger traffic only. A large portion of its business is the transportation of commuters between its New York stations and points in New Jersey, including terminals of the Pennsylvania, Erie, and Delaware, Lackawanna & Western. Because it has no freight service the road has contended it will be unable to absorb the wage increase of 18½ cents per hour which the brotherhoods and the larger railroads agreed to, under White House pressure, May 25, and has insisted that it was not represented in the negotiations that resulted in that settlement.

As a result of this impasse President Truman has named a three-man emergency board to consider the issues and recommend a solution. The board scheduled its first meeting the day this issue went to press, but the strikers' leaders signified their intention to "boycott" the board and continue the strike until the company met their demands. National Mediation Board records disclose no previous case where the appointment of an emergency board has failed to delay a strike until the procedures of the Railway Labor Act have been completed, and the emergency board's tactics in this novel situation were being watched with exceptional interest, though it was generally recognized that no penalty, other than the pressure of public opinion, is provided to insure the enforcement of the statute's "cooling off" provisions.

Public opinion had not noticeably affected the unions as the first week of the strike ended. Pickets were stationed at the road's principal stations appealing for the support of the travelers whom the brotherhoods had inconvenienced, but no actual effort to interfere with any passengers or with the operation of trains or ferries of other railroads, used by them in lieu of the H. & M., had been reported, although local brotherhood leaders were quoted as threatening to demand a "sympathy" strike on certain lines of the Pennsylvania if that road continued augmented local train service from New Jersey points to its Jersey City station, connecting with its ferries to New York.

The Pennsylvania asserted its right and duty under its tariffs to provide this additional service for those of its passengers who under normal conditions would use H. & M. trains between the Pennsylvania's Newark station and New York. The relationship between the Pennsylvania and the Hudson & Manhattan is "contractual and not corporate," the Pennsylvania said, and it is "incorrect to refer to the Pennsylvania as the 'parent' of the H. & M. or to call the latter a 'subsidiary'."

"The Pennsylvania Railroad has no financial interest in the Hudson & Manhattan, either through stock ownership or otherwise," the statement continued. "It has an operating agreement of long standing with the H. & M. whereby that company's tube trains between Newark and Hudson terminal, Manhattan, run over the tracks of the Pennsylvania line between Newark and Journal Square, Jersey City, and holders of Pennsylvania tickets from various points destined to Jersey City and downtown New York are given the option of using H. & M. trains into that company's station at Exchange Place, Jersey City, or Hudson Terminal, New York, or of using the regular trains of the Pennsylvania over its own tracks and into its own terminal station."

Refrigerator Line Bought by North American Car

The North American Car Corporation, Chicago, has announced the purchase of the North Western Refrigerator Line Company which, while retaining its own name, will be a wholly-owned subsidiary of the purchasing company, and will continue under the active management of its president, Allin K. Ingalls.

With the acquisition of the fleet of approximately 3,600 refrigerator cars owned by the newly-acquired subsidiary, North American Car now owns 10,647 cars, of which 6,033 are refrigerator cars and 4,614 tank cars.

Railroad Unemployment Rising

Unemployment benefits paid to railroad workers throughout the country in the two weeks ended May 24, amounted to $2,065,000, the largest amount paid in any similar period since the end of the war, according to a report of the Railroad Retirement Board.

Payments to that date in May indicate a monthly rate of approximately $4,250,000, the highest since the Railroad Unemployment Insurance Act became operative in July, 1939, and about three-fourths of a million dollars more than was paid in January, 1941, the previous high month. Amounts reported by the board do not include any readjustment allowances for unemployment of veterans.

Unemployment among railroad workers has continued to rise, although unemployment for workers covered by state unemployment compensation systems has declined in recent months. Recent increases of railroad unemployment have been sharpest in the Michigan-Ohio-West Virginia-western Pennsylvania area and in the southern states east of the Mississippi. There has been little increase in railroad unemployment in the states west of the Mississippi river in recent months.

Standard Sleepers Added to the R. I.-S. P. "Californian"

Because of the heavy demand for reservations on the "Golden State Limited," 49-hr. passenger train of the Chicago, Rock Island & Pacific and Southern Pacific, between Chicago and Los Angeles, Cal., effective June 2, three standard Pullman sleeping cars were added in each direction to the "Californian," previously an exclusively coach-tourist car train between these cities.

Wheeler Says Facts Call for New Reorganization Procedure

Senator Wheeler, Democrat of Montana and chairman of the Senate committee on interstate commerce, has written the editor of the New York Times a letter "explaining" the legislation which his committee has approved (S. 1253) to modify the procedures under which reorganization of railroads in bankruptcy may be completed. This letter was in reply to one from A. A. Berle, published in that newspaper and summarized in *Railway Age* of June 1, page 1117.

Passage of such legislation has been recommended by his committee, and by the House judiciary committee, Senator Wheeler said, because hearings have disclosed that pending reorganization plans, approved by the Interstate Commerce Commission, would "destroy" stocks and bonds and obligations to banks and business creditors, in the amount of some $2 billion, on the basis of a "mere guess" by government officials that "the securities they propose to destroy will earn nothing in the future, and must be destroyed as if they were noxious weeds."

"Every guess made by the commission in major cases has been repudiated by actual large earnings on the forfeited bonds and stocks every year since the guess was made," Senator Wheeler wrote. "The forfeiture guesses are also rejected by the earnings of prior periods. Every major railroad system whose stocks and part of whose bonds are threatened with forfeiture under pending decrees has, in the past twenty-five years, earned all its interest charges and has also earned money on its stock. During those years it paid interest at rates 50 to 100 per cent higher than present money market conditions make appropriate. Once the interest rates on the obligations on those railroads are adjusted to present conditions, their earnings record makes even more fantastic the destruction of their obligations on the basis of guesses.

"The facts brought to light at the hearings of the two congressional committees demonstrate the danger of permitting any government official to destroy property on the basis of a guess. For example, . . .

the commission guessed that preferred and common stock of St. Louis Southwestern Railway could never earn anything, and on this theory ordered the destruction of those stocks. Since that guess was made the company has earned $172 on each $100 share of preferred stock and $144 on each $100 share of common stock.

"The commission decreed that the stock of Gulf Coast Lines is almost entirely worthless. Since that decree the company earned more than $100 on each $100 share of stock. In addition, during the first three months of this year, after deducting all wage increases, the company earned $11 a share.

"When strong railroads, such as Pennsylvania, New York Central, Baltimore & Ohio, and Great Northern, show a deficit during the first quarter of 1946, it is obviously not a disgrace for any other road to do the same. What shall we say of such railroads as the Rock Island, the Missouri Pacific and St. Louis Southwestern, which earned all their interest charges plus substantial sums on their stocks during the first quarter of 1946, despite the outstanding decrees that such stocks are incapable of earning anything and must be destroyed? The bill unanimously reported to the Senate by the interstate commerce committee is modeled on a congressional statute passed in 1939 and reenacted in 1942. The bill would prevent forfeitures of bonds and stocks, and would also prevent the present practice of forcing bondholders to accept miscellaneous assortments of bonds and stocks in place of the bonds they bought and want to retain. . . ."

Missouri Pacific Speeds Its Passenger Trains

Widespread improvements in passenger train schedules between St. Louis and Texas points were made effective June 2 by the Missouri Pacific and Texas & Pacific. At the same time other schedule changes resulted in improved service between St. Louis and Colorado cities served by the M. P. and the Denver & Rio Grande Western.

Under the new schedules the "Sunshine Special," north Texas-California section, leaves St. Louis at 5:30 p.m., 20 min. earlier than before, Memphis, Tenn., at 10 p.m., 15 min. later, and arrives in Dallas, Tex., at 9:50 a.m., 1 hr. 20 min. earlier, Ft. Worth at 10:45 a.m., 1 hr. 25 min. earlier, and El Paso at 7:45 a.m., the second day, 1 hr. earlier. The St. Louis-Los Angeles sleeper handled on this train via the Southern Pacific from El Paso, arrives in Los Angeles at 7 a.m., the third day, 2 hr. 40 min. earlier than before. The south Texas section of the "Sunshine Special" also leaves St. Louis at 5:30 p.m., and Memphis at 10 p.m., arriving at Houston at 2 p.m., Galveston at 4:10 p.m., 1 hr. 20 min. earlier at each point, San Antonio at 5:35 p.m., 1 hr. 10 min. earlier, and Laredo at 10 p.m., 1 hr. 15 min. earlier. The Louisiana section of this train has been quickened to arrive in Alexandria at 9:45 a.m., 2 hr. 15 min. earlier and Lake Charles at 1 p.m., 2 hr. 45 min. earlier.

The "Texan," which continues to leave St. Louis at 2:10 p.m., now departs from Memphis at 7:10 p.m., 40 min. later, Little Rock, Ark., at 10:25 p.m., as before, arriving in Dallas at 7:25 a.m., 1 hr. 10 min. earlier, Ft. Worth at 8:30 a.m., 1 hr. 15 min. earlier, and Houston at 10:45 a.m., 1 hr. 10 min. earlier. Train No. 7, the "Southerner," now leaves St. Louis at 12:30 a.m., 30 min. later, Memphis at 8:10 a.m., as before, arrives Little Rock at 10:15 a.m., as before, Dallas at 8:30 p.m., 45 min. earlier, Ft. Worth at 10:40 p.m., 40 min. earlier, and El Paso at 1 p.m., 5 hr. 30 min. earlier. A new train, No. 37, has been established to handle the "Southerner's" south Texas traffic, leaving St. Louis at 1:30 a.m., daily, 1 hr. 30 min. later than the train previously handling these cars, and arriving in Houston at 5:45 a.m. as at present, San Antonio at 7:10 a.m., and Laredo at 2:45 p.m.

Northward, the west Texas-California section of the "Sunshine Special" leaves El Paso at 10 p.m., 35 min. later than before, with the Los Angeles sleeper leaving that city at 8:20 p.m., the evening before, 1 hr. 25 min. later. From Ft. Worth, the El Paso-Los Angeles section is consolidated with the "Sunshine Special" instead of the "Texan," to provide an 8:30 a.m. arrival in St. Louis, in lieu of the previous 11:30 a.m. arrival. Under the new schedule the "Sunshine" now leaves Ft. Worth at 3:15 p.m., and Dallas at 4:15 p.m., both 45 min. later than before, Texarkana at 9:05 p.m., 25 min. later, arriving at Memphis at 6:25 a.m., and St. Louis at 8:30 a.m. as previously.

The south Texas section of the "Sunshine" leaves Laredo at 4 a.m., 1 hr. 5 min. later, San Antonio at 9 a.m., Galveston at 9:45 a.m., Houston at 12:01 p.m., each 1 hr. later, arriving at Texarkana at 8:40 p.m., 55 min. later, and at Memphis at 6:30 a.m., and St. Louis at 8:30 a.m., as before. The northbound "Texan" leaves Ft. Worth at 5:05 p.m., 50 min. later than before, Dallas at 6 p.m., 45 min. later, and Houston at 2:40 p.m., 1 hr. later, arriving in Memphis at 6:45 a.m., and St. Louis at 11:30 a.m., as before.

Train No. 8, the "Southerner," is unchanged in its departure times from Laredo, Houston, and San Antonio, but has been quickened to arrive in St. Louis at 10:30 p.m., 30 min. earlier than under previous schedules. A new train, No. 38, known as the west Texas section of the "Southerner," has been established from El Paso to St. Louis, leaving El Paso at 12:10 p.m., Ft. Worth at 7:30 a.m., Dallas at 8:15 a.m., Texarkana at 12:55 p.m., and arriving at Little Rock at 4 p.m., Memphis at 7:20 p.m., and St. Louis at 11 p.m. This train offers, for the first time, all daylight passenger service from Dallas and Ft. Worth to St. Louis.

As a part of their improved service between St. Louis and Texas points, the M. P. and T. & P. have also inaugurated through sleeping car service between St. Louis and Ft. Worth via the "Sunshine Special" north of Texarkana and the Bonham subdivision of the T. & P., serving Paris, Tex., Bonham, Sherman and Denton.

To and from the West, the M. P. and D. & R. G. W. have improved the schedule of the "Colorado Eagle" to provide a 35 min. earlier arrival in Colorado Springs, Colo., and a 45 min. earlier arrival in Denver. Eastbound a 15 min. earlier arrival in St. Louis provides easier connections with trains of the various eastern lines.

More Floods in Pennsylvania

Following excessive rainfall in western New York and central Pennsylvania and resulting flood conditions that interrupted train service in that area, as noted in *Railway Age* last week, rains of cloudburst proportions in eastern Pennsylvania last week-end produced high waters which further affected railroad operations, especially on the Baltimore & Ohio line along the Schuylkill river in Philadelphia.

At the same time, renewed rainfall in southern New York again raised rivers in the vicinity of Elmira and Corning, the focal points of the earlier floods that had caused trouble on the Erie and Delaware, Lackawanna & Western, but no additional damage was reported. Service has been restored on the Lackawanna main line, on which the one bridge that was weakened has been strengthened by driving falsework.

This week the Erie was detouring main line trains over about 10 miles of the Lackawanna between Big Flats, N. Y., and Painted Post, while work was being rushed where two bridges were washed out, as reported in last week's issue. One 84-ft. girder span was expected to be replaced this week by a temporary pile trestle, and a temporary double-track pile trestle was under way to replace two 148-ft. truss spans crossing the Chemung river.

Service on the Pennsylvania from Williamsport, Pa., north and west has been restored. Trains moved to Erie and Buffalo the evening of May 29. Serious washouts in the Trout Run area halted operations on the line from Williamsport to Canandaigua, N. Y., until the evening of June 4. The Schuylkill flood interrupted service on lines between Philadelphia and Norristown, Pa., the night of June 2, but passengers were transferred by bus around the section where trains did not operate.

Representation of Employees

The Brotherhood of Railroad Trainmen retained its right to represent yardmasters employed by the Norfolk & Portsmouth Belt Line and yardmen, including foremen and helpers, employed by the North Pacific Terminal of Oregon as the result of recent elections which have been certified by the National Mediation Board. The defeated challengers were the Railroad Yardmasters of America and the Switchmen's Union of North America, respectively.

As the result of another election, the B. of R. T. has extended its coverage of Central of New Jersey yardmen to include those outside the New York Harbor terminal, who were formerly represented by the Order of Railway Conductors. The B. of R. T. also replaced the Switchmen's Union of North America as the representative of yardmen employed by the Fort Worth Belt.

In other elections in which representation rights were retained, a local committee continues to represent coal dock employees, other than clerks, employed by the Duluth, Missabe & Iron Range, the Brotherhood of Railway and Steamship Clerks having been defeated, while unions operating through the Railway Employees' Depart-

ment, American Federation of Labor, continue as the bargaining agents for electrical workers, helpers and apprentices employed by the Louisville & Nashville. The Brotherhood of Railroad Shopcrafts of America was defeated, 737 to 351, in the latter election.

Mechanical department foremen and supervisors employed by the Florida East Coast, who formerly were without representation, are now represented by the Railway Employees' Department, A. F. of L., and road conductors, road brakemen and maintenance of way employees of the Virginia Blue Ridge, who likewise had no representation, are now represented by the United Mine Workers of America, District 50. The latter also sought to represent Virginia Blue Ridge shopmen, but in that case the N. M. B. was unable to make a certification because less than a majority of those eligible to vote cast legal ballots.

Results of other elections find the Brotherhood of Locomotive Firemen and Enginemen supplanting the Brotherhood of Locomotive Engineers as the representative of engineers and firemen employed by the Pittsburgh, Chartiers & Youghiogheny and the Brotherhood of Railway and Steamship Clerks representing clerical, office, station and storehouse employees of the Western Weighing & Inspection Bureau. Prior to the latter election, decided by a 660 to 364 vote, some of the employees involved were represented by the Employees' Association of the Bureau and others by "other labor organizations," the N. M. B. report stated.

A. A. R. Reviews B. I. R. Report on "Public Aids"

The Association of American Railroads has issued, in about 100 mimeographed pages, a summary and analytical review of the report by the Board of Investigation & Research entitled "Public Aids to Domestic Transportation." This report was issued by the government under date of December 19, 1944, as "Document No. 159—79th Congress, First Session." The A. A. R. review was prepared under the direction of Dr. C. S. Duncan, the A. A. R.'s economist, by a committee which included J. C. Greenway, C. K. Smith and E. R. Feldman of the Association's competitive research organization.

The A. A. R. review was undertaken because of the magnitude of the B. I. R. report (1,026 pages) and because of the conflicting expressions which it embraces.

In addition to the so-called "staff report," in the B. I. R. document, which was drafted by a research staff under the direction of Dr. Burton N. Behling and dealt in detail with matters of public aids to railroads, highways, waterways and airways, there were in it also "statements" by the two board members on "the major points on which the staff report does not convey our respective opinions." These respective opinions did not agree with one another.

One board member, C. E. Childe, went so far as to undertake to rewrite the chapter by the staff on Public Aids to Water Transportation (pp. 877-970), to revise the sections of the appendix dealing with the Tennessee river (pp. 971-1002) and the Missouri river (pp. 1003-1008), and also to append a caustic criticism of the staff report on Public Aids to Motor Transport, that was written by the Public Roads Administration (pp. 1009-1026). He even included in the volume a "revision" of the summary and conclusions of the staff report (pp. 839-876).

To clear up the confusion, the A. A. R. review reports the work done by the staff and points out wherein one or both members of the board disagree with the staff, with the reasons for disagreement wherever given.

Film Shows Care of Journal Boxes of Diesels

An instruction film dealing with the care and maintenance of railroad journal boxes for Diesel locomotives has recently been released by the Hyatt Bearings Division of General Motors. The sequences for this sound motion picture were made through the cooperation of the Erie Diesel shop, the Mt. Clare Baltimore & Ohio shops and the Southern.

The film opens with a locomotive coming in for routine check at one of the new two-level type modern Diesel shops, then shows the trucks lowered and conveyed to the work track where the boxes are dismantled, cleaned, inspected and reassembled on the trucks and again ready for the rails. Correct methods of race and wheel removal as well as all the up-to-date equipment for handling, servicing and storing of roller bearing journal boxes and parts are clearly and completely demonstrated.

The Electro-Motive Division of General Motors is showing the film on instruction cars and in other training work. It is a standard 16mm. film with sound track; the running time is about twenty minutes. Prints are available on loan through the Electro-Motive Division, LaGrange, Ill., or the Hyatt Bearings Division, Harrison, N. J.

Central Western Shippers Board to Meet June 12

The Central Western Shippers Advisory Board will hold its twenty-fourth annual meeting on June 12 and 13, at the Gladstone hotel, Casper, Wyo. The session on June 12 will feature discussions of freight loss and damage prevention, general car efficiency and l. c. l. transportation. On June 13, the main event will be a luncheon at which F. G. Fitz-Patrick, vice-president, traffic, Chicago & North Western, will speak on the subject "Our railroads are your railroads."

New England Resort Trains Put Back in Service

A restoration of near pre-war summer service schedules has been announced by the New York, New Haven & Hartford. Trains re-established for the 1946 summer season include the "Day Cape Codder" and "Neptune" to the Cape Cod area, the "East Wind" and "Bar Harbor Express" to Maine resorts, and the "Valley Express" and "Night White Mountains" to Connecticut Valley points. In addition, the "North Wind," a new through day service from New York, will make intermediate Connecticut Valley stops, terminating at Bretton Woods—Fabyan. A number of these trains will operate only one or two days a week during June, become daily trains when summer travel hits its peak.

The "Day Cape Codder" will provide an early morning departure, and the "Neptune" a late afternoon departure, daily after June 16 and June 27, respectively. Steamer service to Nantucket and Martha's Vineyard will be provided from Woods Hole by the Massachusetts Steamship Lines.

The "East Wind," a reserved seat daytime coach train originating in Washington, D. C., will again furnish daily service to Maine points from Portland to Rockland, via Pennsylvania station, New York. Additional Maine service will be provided by restoration of the overnight "Bar Harbor Express" from Washington, running daily after June 23.

With the addition of the "North Wind," the Connecticut Valley will have better summer service than in pre-war years, the New Haven explains. The "Night White Mountains" will provide overnight week-end service to Bretton Woods—Fabyan and other Connecticut Valley resorts, the "Valley Express" will provide late afternoon week-end service to White River Junction, and the new "North Wind" will furnish a fast daytime service out of Grand Central terminal, daily except Sunday, that will place vacationists in Bretton Woods—Fabyan in the late afternoon.

Two former summer trains will also be re-established to serve Connecticut and Rhode Island shore resorts. The first, the "Cabana," will depart from New York Saturdays at noon and will return on Sundays, leaving Providence in the late afternoon. The second, the "Seashore Express," will serve Connecticut shore points, leaving New York mid-afternoon on Fridays and returning early on Monday mornings.

To Survey Cleveland Plants for Smoke Abatement

The Coal Producers Committee for Smoke Abatement has announced arrangements for a survey of heating and power plants in Cleveland, Ohio, to be made in cooperation with the Citizens Air-Purification Committee. It was decided to make the survey on a "postage stamp" basis, which means that numerous small areas would be selected on a geographical basis and all the plants in those areas included in the survey. In all about 300 plants will be surveyed.

The committee's engineering director, H. B. Lammers, has presented a 182-page report of a survey of heating and power plants in Akron, Ohio, to the city council. "I do not wish to give the impression that this survey is going to abate any smoke," said Mr. Lammers. "The report will show the sources of smoke, the causes and what can be done to abate it. The ordinance we are submitting for your consideration will, we believe, go a long way toward abating the smoke nuisance. But from here on out, it is up to city officials to make the decisions and provide for proper enforcement."

The railroads in the committee are the Chesapeake & Ohio, Baltimore & Ohio, New York Central, Louisville & Nashville, and Pennsylvania.

A list of current publications appears on page 1169.

With the Government Agencies

Class Rate Litigation Delays Ex Parte 162

Motion to vacate injunction says emergency relief would aggravate discriminations

That litigation in connection with the interim class rate adjustments prescribed by the Interstate Commerce Commission in the No. 28300 proceeding is holding up commission action on that phase of the railroads' Ex Parte 162 petition which sought to make the proposed 25 per cent increase in freight rates effective May 15 was indicated in a motion filed last week in the United States Supreme Court by Attorney General Clark and commission counsel. The motion asks that the lower court injunction staying the operation of the No. 28300 order be vacated pending appeal of the case.

As noted in the *Railway Age* of May 18, page 1027, the lower court—a special three-judge federal court at Utica, N. Y.—denied the petition of northern states for an order setting aside No. 28300's interim adjustment which provides that class rates in the South and West (except in the territory west of the Rocky Mountains) should be reduced 10 per cent, and that Official Territory class rates should be increased 10 per cent, pending the development of a new "uniform" class rate structure in conformity with the decision's other findings. In denying the petition, however, the lower court continued in effect the injunction it had issued, thus requiring that the interim adjustment be further delayed for a period of 60 days from May 27, and thereafter until final determination of the issue by the Supreme Court if, during the 60-day period, the plaintiffs perfect an appeal.

The reference to the Ex Parte 162 proceeding came in the Department of Justice-I. C. C. motion's argument in support of its call for vacation of the injunction. "Almost all of the railroads of the United States," it said, "now have pending before the commission their petition filed on April 15, 1946, asking for authorization to increase all of their freight rates, with certain exceptions but including the class rates involved in this proceeding, 25 per cent, as an emergency measure effective May 15, 1946, on one day's notice, and pending a hearing. A summary hearing was held by the commission on the emergency phase of this petition, but no action has yet been taken by the commission.

"The commission cannot grant this flat freight rate increase requested by the railroads, in whole or in part, without aggravating the discriminations found to exist with respect to class rates. . . . Further, the commission cannot, in connection with any general freight rate increase, make any adjustment to give effect to its order in the class rate case (i. e., combine a general increase with adjustments of the class rates so as to alleviate the discriminations, or even to preserve present territorial rate relationships), because of the bar of the injunction now in effect. Regardless of the merits of the petition of the carriers for a general rate increase, some of these carriers, namely, the western railroads which are appellees here, are, by the injunction pending appeal which they have sought and obtained, presenting the commission with the alternatives of stultifying itself by an order aggravating the existing discriminations, or of considering its hands tied in granting a general rate increase which the facts, when developed, may show to be necessary."

F. C. C. Waives License Rule on Mobile Transmitters

Provisions of the Communication Act's section 318 which stipulate that the operation of the transmitting apparatus of licensed radio stations may be carried on only by persons holding an operator's license have been waived by the Federal Communications Commission insofar as they require any person to hold an operator's license in order to operate the various classes of mobile or portable radio transmitting apparatus authorized for use in the "Emergency, Miscellaneous, Railroad and Experimental Services." The waiver came in the commission's Order No. 133, effective June 1.

The order does not apply to any portable or mobile station using radiotelegraphy employing manual operation; to any portable or mobile station operating on frequencies below 25 megacycles unless such operation is subject to control by a licensed operator of the associated land station operated by the same licensee; or to any portable or mobile station in the "experimental service" looking to common carrier operation on a regular basis other than in the "general mobile radio service." And the order's terms are not to be construed "to authorize any person not holding a proper operator license . . . to make adjustments to any radio transmitter."

Improper Placing of Explosives Costs Southern $100

Secretary W. P. Bartel of the Interstate Commerce Commission announced, on June 4, that the commission had been advised that a plea of *nolo contendere* was entered on behalf of the Southern in the federal court of the western district of South Carolina on May 28, to an information in one count which charged violation of the commission's regulations governing the transportation of explosives and other dangerous articles. A fine of $100 was imposed.

The specific offense charged in the information was the improper placing of a carload of freight placarded "Explosives" in a local freight train next to the locomotive.

Commodities Clause Distorted by Court

So says I. C. C. in suggesting that Congress make its intention clear

Declaring itself unconvinced that the United States Supreme Court's interpretation of the Interstate Commerce Act's commodities clause "truly represented the intent of Congress or reflected sound economic policy," the Interstate Commerce Commission has made a case where the matter arose the occasion for an expression of its view that Congress "should make clear its intention, as we conceive it to be." The commission's declaration came in its report on argument in the reopened Finance Docket No. 14850 proceeding, which involved the application of the Chesapeake & Ohio for authority to construct a 14.6-mile line from Jenkins, Ky., into Virginia to serve the so-called Meade Fork mine being opened by the Clinchfield Coal Corporation.

With the dissents of Commissioners Rogers and Alldredge noted, the commission affirmed the finding of the prior report by Division 4 that public convenience and necessity required construction of the line; but in doing so it imposed a condition stipulating that "no interlocking directorates, either now, or in the future, shall exist as between the Allegheny Corporation, the Chesapeake & Ohio, or its affiliated companies, on the one hand, and the Clinchfield Coal Corporation, on the other hand, unless and until otherwise ordered by this commission."

When it made the prior report, Division 4 also made a report in Finance Docket No. 14820 authorizing the Atlantic Coast Line and Louisville & Nashville, lessees of the Carolina, Clinchfield & Ohio, to operate, and the latter to construct, in the same general territory, a 14.5-mile line from Fremont, Va., to serve the coal corporation's so-called Lick Fork mine. These two Division 4 reports were noted in the *Railway Age* of September 15, 1945, page 461.

The C. & O. proceeding out of which the present report has come was reopened by the commission after a petition seeking such action had been filed by the Clinchfield and its co-applicants in F. D. No. 14820, who had opposed the C. & O. application at the original hearing. Their contention was that the line which the Clinchfield had been authorized to build to Lick Fork would completely satisfy the transportation requirements of the territory. Another contention of the Clinchfield, as the commission put it, related to "the alleged alienation by the Chesapeake & Ohio of the friendly relationship and interests which had existed over a long pe-

riod of years" between the coal corporation and the Clinchfield.

Pittston's Activities — In the latter connection the report further noted that in July, 1944, "the Pittston Company, 76.9 per cent of whose capital stock is owned jointly by Chesapeake & Ohio and the Allegheny Corporation, acquired 63.2 per cent of the capital stock of the coal corporation." The Clinchfield argued that, with this set-up, construction by the C. & O. of the proposed line would constitute a violation of the commodities clause—section 1(8) which makes it unlawful for any railroad to transport in interstate or foreign commerce "any article or commodity, other than timber and the manufactured products thereof, manufactured, mined, or produced by it, or under its authority, or which it may own in whole or in part, or in which it may have any interest, direct or indirect, except such articles or commodities as may be necessary and intended for its use in the conduct of its business as a common carrier."

Supreme Court decisions have held in effect that ownership of stock by a railroad in a mining or producing company does not comprise a violation of the commodities clause unless the railroad uses such stock ownership for the purpose of treating the controlled company as a mere agency or department of the railroad.

The E. J. & E. Case—The commission looked over the leading court decisions on the matter, particularly the Elgin, Joliet & Eastern case (*U. S. v. Elgin J. & E. Ry.* 298 U. S. 492) wherein the question of a holding company's position under the commodities clause was considered. As the commission pointed out, the United States Steel Corporation owned all of the capital stock of the Elgin, Joliet & Eastern. It went on to note that the court there decided "that the mere fact that all of the shares of a railroad corporation and all the shares of a manufacturing corporation are owned by a holding company does not make the transportation by the one of the products of the other unlawful under the commodities clause, and that the existence of the power in the holding company to control the railway company, which was found not exercised in that case, did not make the railway company the *alter ego* of the holding company."

Applying the principles thus indicated, the commission found itself unable to say definitely that the acts of the Clinchfield Coal Corporation as set forth in the record "were of such a nature that they should be presumed to be the act of the Chesapeake & Ohio or the Allegheny Corporation." It continued to the expression of its view that Congress should make clear its intentions, as noted above. And it then proceeded to impose the condition banning interlocking directorates between Allegheny and C. & O. and Clinchfield, saying it felt warranted in doing so "in recognition of the sound economic policies so strongly and ably phrased in the dissenting expressions" to the court's decision in the E. J. & E. case. The commission also noted that the condition was similar to those "we have attached to the certificates in other proceedings where the generally similar situation was presented."

All Forwarders Excluded from Retirement Act

Representative Boren, Democrat of Oklahoma, a member of the House committee on interstate and foreign commerce, inserted in the appendix to the June 4 issue of the Congressional Record a statement asserting that it was "clearly the intent" of that committee to exempt all forwarders from the Railroad Retirement Act. Mr. Boren's statement was made to correct a "misstatement of fact" contained in the committee's recent report to the House on its modified version of H. R. 1362, the Crosser bill to liberalize the Retirement Act and the Railroad Unemployment Insurance Act.

As noted in the *Railway Age* of May 18, page 1031, and as Mr. Boren pointed out, the committee's report stated that the reported bill would not extend the coverage of the Retirement Act to forwarders "not controlled by railroads," thus leaving the implication that railroad-controlled forwarders are covered by the present law. Actually the Railroad Retirement Board's contention that they are covered is being litigated in the federal courts; and Mr. Boren was concerned because the "misstatement" in the committee's report "seemingly interprets the intent of Congress in enacting the original law."

"The present law and this bill," he said, "is a Railroad Retirement Act and it is not a freight forwarder retirement act in any respect whatsover. I want it definitely understood that it was never our [committee's] intention to bring under the Railroad Retirement Act the business of freight forwarding. . . . Since the inadvertent language of the report has caused questions to be raised by some of you, I want to assure you positively that no freight forwarder is intended to be covered by this act."

Car Service Orders

Amendment No. 2 to Service Order 518 has been issued by the Interstate Commerce Commission to prohibit the Atlantic Coast Line and Richmond, Fredericksburg & Potomac from holding for reconsignment or diversion at Richmond, Va., any car loaded with potatoes. The amendment became effective June 5, the order's previous prohibitions against holding by the Norfolk Southern at Berkley, Va., and the A. C. L at Rocky Mount, N. C., and Petersburg Va., remaining in effect.

Service Order 525-A vacated on May 29, Service Order 525, issued the previous day to restrict the movement of bituminous coal held at mines not operating due to the miners' strike which was settled on the 29th.

R. E. A. Employees Get Wage Increase of 18½ Cents

Settlement of Railway Express Agency wage cases on the basis of the 18½ cents per hour increase awarded to railroad employees as a result of President Truman's proposal was announced at the White House last week. The settlement was brought about by the emergency board to which the R. E. A. cases had been referred, as noted in the *Railway Age* of May 4, page 940.

It provides that the 18½ cents per hour increase shall become effective May 22, but retroactive adjustments for varying periods prior to that date shall be on the basis of 16 cents per hour. Employees represented by the Brotherhood of Railway Clerks will receive retroactive adjustments from January 1, while the beginning of retroactive periods applying to employees represented by the International Association of Machinists and the International Brotherhood of Blacksmiths, Drop Forgers and Helpers will be February 1 and March 1, respectively.

Higher Prices for Switch Ties Produced in East

Discretionary ceiling price increases ranging from $1 to $7 per thousand board feet on approximately 97 per cent of all railroad switch ties produced in the eastern part of the country have been announced by the Office of Price Administration. The increases, effective June 8, were authorized by Amendment No. 5 to Third Revised Maximum Price Regulation 216.

The O. P. A. action, according to the official announcement, was designed "to increase production of switch ties needed by railroads for replacement and new construction." It was calculated that the increases would average about 14 per cent over-all, and they "will be passed on to the railroads."

Asks $525,000 for O. D. T.

President Truman has submitted to Congress a budget estimate calling for appropriations totaling $525,000 for the Office of Defense Transportation during the next fiscal year ending June 30, 1947. The estimate also shows that O. D. T. had during the current fiscal year ending June 30, 1946, appropriations totaling $7,515,000, while the amount appropriated for its activities in fiscal 1945 totaled $17,000,000.

Meanwhile the Third Urgent Deficiency Appropriation Bill, 1946, is on its way through Congress with a provision modifying O. D. T.'s current appropriations to increase from $14,000 to $20,000 the limitation on the amount available for printing and binding. As noted in the *Railway Age* of May 25, page 1077, this modification will permit O. D. T. to publish its report on wartime transportation.

O. D. T. Order 60 Canceled as Bituminous Strike Ends

Following the settlement of the bituminous coal miners' strike on May 29, the Office of Defense Transportation on the same day revoked General Order ODT 60 which had been in effect since May 10 to prohibit railroads from operating a total daily coal-burning, passenger-service locomotive mileage in excess of 75 per cent of the total operated on April 1. The coal strike was settled after the government took possession of the mines, the settlement being on the basis of an agreement entered into by Secretary of Interior Krug and the United Mine Workers of America.

Among other provisions, it increases the miners' basic hourly wage rate by 18½ cents and provides for a welfare and retirement fund to be financed by an assessment of five cents on each ton of coal produced

for use or sale. Compensatory increases in the prices of coal are expected to be authorized by the Office of Price Administration.

Most train schedules which had been curtailed in compliance with the O. D. T. coal conservation order were restored by the affected railroads promptly upon its cancellation.

Committee Votes to Report St. Lawrence Seaway Resolution

The Senate committee on foreign relations on June 5 voted to report favorably Senate Joint Resolution 104 which would approve the agreement between the United States and Canada for development of the St. Lawrence seaway and power project, thus obviating the need for a treaty, approval of which would require a two-thirds vote by the Senate.

Cancel Tariffs Proposing to Cut Auto Rates in East

Acting upon cancellation by the railroads of the tariffs involved, the Interstate Commerce Commission has discontinued the I. & S. No. 5384 proceeding wherein certain roads in Official territory were proposing to establish an exception rating on new automobiles lower than the maximum prescribed by the commission in the No. 28190 case. As noted in the *Railway Age* of March 23, page 656, the now-canceled tariffs were suspended on complaint of American Trucking Associations, the railroads being thus prevented from maintaining the rating of 75 per cent of first class which prevailed before the commission substituted an 85 per cent rating in the general proceeding.

Army Loses Norfolk Wharfage Allowance Case

Reversing a previous decision by its Division 2, the Interstate Commerce Commission, in a report on reconsideration in No. 29117, has ruled that the railroads' refusal to make an allowance for wharfage and handling services performed by the Army with respect to its shipments moving over Army piers in Norfolk, Va., or to furnish the services themselves, was not an unjust and unreasonable practice resulting in unjust discrimination in violation of Sections 1 and 2 of the Interstate Commerce Act. The commission ordered the prior order vacated and the complaint dismissed.

As noted in *Railway Age*, August 25, 1945, page 348, where Division 2's report was reviewed, the controversy arose in June, 1942, when the Army took over certain Norfolk piers, formerly operated as public facilities by a contractor whose charges were absorbed by the railroads. When the Army took over, the carriers refused to continue previous allowances and absorptions.

The present report sustaining that refusal notes that anything but Army operation of the piers was "impractical," and cites among other precedents commission decisions in terminal services cases where there was evolved the principle to the effect that when a carrier is prevented from performing a service by the election of an industry to perform it, the carrier's duty under the line-haul rates is discharged, and there is no obligation resting upon it to make an allowance to the industry for performing the service.

The decision brought dissents from Commissioners Splawn, Alldredge, Aitchison and Rogers. Commissioner Splawn said that for more than 50 years railroads serving Norfolk and other North Atlantic ports have held themselves out in tariffs applicable to traffic moving on shipside rates to absorb the cost of wharfage and the handling. He added that during the war emergency it was necessary for the Army to take over the piers, and the issue was whether the Army should receive the four cents per 100 lb., previously paid to the contractor, or whether the railroads should be permitted to retain the money.

Commissioner Alldredge said that much of the discussion in the majority report seemed to him to be irrelevant. He declared that various rulings and doctrines mentioned may possibly be sound and correct in the abstract, but to him they were not pertinent to the issues at hand.

He conceded that in publishing the rates at issue the carriers followed their usual practice of limiting their assumption of terminal costs to those instances in which they perform the services themselves or had them performed under their supervision, and that such restrictions have been upheld in many cases as lawful. At the same time he insisted that the validity of such restrictions rests more upon the necessity (not present in this case) of policing the transactions in order to prevent violations of the law than upon any essential differences in the transportation services performed.

Commissioner Aitchison said he dissented for the same reasons as Commissioners Splawn and Alldredge, while Commissioner Rogers' dissent was noted without any expression from him.

Virginia's "Jim Crow" Bus Law Declared Invalid

Virginia's law, requiring bus operators to separate their white and colored passengers so that contiguous seats will not be occupied by persons of different races at the same time, was held invalid by a June 3 opinion of the United States Supreme Court. The statute was struck down on the basis of a finding that the required segregation was an "undue burden" on interstate commerce, it being "clear" to the court that "seating arrangements for the different races in interstate travel require a single, uniform rule to promote national travel."

The opinion, in *Irene Morgan v. Commonwealth of Virginia,* was announced by Justice Reed and Justice Rutledge concurred "in the result." Separate concurring expressions came from Justices Black and Frankfurter, while Justice Burton dissented. Segregation of railroad passengers was not specifically covered by the statute involved, but Justice Burton's dissent pointed out that the law, enacted in 1930, "conforms to the policy adopted by Virginia as to steamboats (1900), electric or street cars and railroads (1902-1904)."

The case reached the Supreme Court on appeal from a ruling of the Supreme Court of Appeals of Virginia. The latter had upheld the conviction of the appellant, a negro, who had been arrested and fined $10 following her refusal to accede to the request of a bus driver to change her seat during the course of her journey from Gloucester County, Va., through the District of Columbia, to Baltimore, Md.

In the absence of federal law dealing with the separation of races in interstate transportation, the Supreme Court, as Justice Reed put it, was confronted with the necessity of deciding the validity of the Virginia statute "as a matter of balance between the exercise of the local police power and the need for national uniformity in the regulations for interstate travel." As noted above, the court held that the latter "need" should prevail. Declaring the matter important "to show whether there are cumulative effects which may make local regulation impracticable," it had previously noted that 18 states prohibit racial separation on public carriers, while 10 require separation on motor carriers.

"The interferences to interstate commerce which arise from state regulation of racial association on interstate vehicles has long been recognized," the court continued. "Such regulation hampers freedom of choice in selecting accommodations. The recent change in transportation brought about by the coming of automobiles does not seem of great significance in the problem. People of all races travel today more extensively than in 1878, when this court first passed upon state regulation of racial segregation in commerce. The factual situation set out in the preceding paragraphs emphasizes the soundness of this court's early conclusion in *Hall v. DeCuir,* 95 U. S. 485."

The latter arose under a Louisiana statute that prohibited segregation, and the Supreme Court found the statute invalid. "As our previous discussion demonstrates," the present decision commented, "the transportation difficulties arising from a statute that requires commingling of the races, as in the *DeCuir* case, are increased by one that requires separation, as here."

In his concurring expression, Justice Black complained of the court's readiness to nullify state legislation under the "undue burden on commerce formula," but he said that, so long as the court remains committed to that formula, "I must make decisions under it." At the same time he believes that "whether state legislation imposes an 'undue burden' on interstate commerce raises pure questions of policy, which the Constitution intended should be resolved by the Congress." For Justice Frankfurter, the *DeCuir* case was "controlling," although he said also that Justice Burton's dissent had stated "with great force reasons for not invalidating the Virginia statute."

Justice Burton asserted that the record contained "no findings of fact that demonstrate adequately the excessiveness of the burden, if any, which the Virginia statute has imposed upon interstate commerce during the years since its enactment, in comparison with the resulting effect in Virginia of the invalidation of this statute." He also noted the majority's reference to the diversity between the Virginia statute and comparable statutes of other states, adding that if such diversity is so serious as to

render the Virginia statute invalid, "it probably means that the comparable statutes of other states, being diverse from it and from each other, are also invalid."

"It is a fundamental concept of our Constitution," Justice Burton concluded, "that where conditions are diverse the solution of problems arising out of them may well come through the application of diversified treatment matching the diversified needs as determined by our local governments. Uniformity of treatment is appropriate where a substantial uniformity of conditions exists."

Materials and Prices

The following is a digest of orders, notices and information that have been issued by the Office of Price Administration and the Civilian Production Authority, since May 20 and which are of interest to railways:

Construction—To bring construction authorizations into balance with the supply of building materials C.P.A. has ordered field offices to reduce their dollar value of authorizations by two-thirds for at least the next 45 days.

Copper Wire—The supply of copper wire bars for June is expected to be the lowest for several years, C.P.A. officials have informed the Copper Wire and Cable Mill Advisory Committee. According to C.P.A. only about 10,000 tons are expected to be available in June, while the current requirements of the wire mill industry for these bars are currently running at between 50,000 and 60,000 tons per month.

Lumber—An increase in the yearly setaside of housing construction lumber at the mill level from 8,200,000,000 ft. to 12,000,000,000 ft. is being considered by C.P.A., M. W. Niewenhous, director of forest products, told the lumber and building materials industry advisory committee. The action, if effected, would be contained in an amendment to direction No. 1 to PR No. 33.

Manila Cordage—Restrictions on importation of manila and abaca cordage and products have been lifted by C.P.A. Amendment to general imports order No. M-63. Manila or abaca fiber and tow are still subject to M-63.

Rosin Supplies—To safeguard rosin supplies for domestic housing and reconversion needs, C.P.A has announced that exports will be held to 250,000 drums for the six months period ending September 30, 1946.

Prices

Barbed Wire—Maximum prices are established on two types of surplus barbed wire offered for sale in regular civilian channels, in second revised O.P.A. order No. 88 under supplementary order No. 94, effective immediately.

Box Bolts—Ceilings for aspen and jack pine box bolts, seven inches and up in diameter, produced in Wisconsin and the upper peninsula of Michigan have been established by O.P.A. in amendment No. 6 to R No. 535-2, effective June 5.

Brass Products—Producers of brass mill products may increase their maximum prices to reflect the 2.375 cents a lb. increase in the cost of copper, effective June 3, under an amendment to supplementary O.P.A. regulation No. 140.

Cable—Manufacturers of braided building-wire and nonmetalic sheathed cable may continue to sell these products to the same chain stores at Zone B ceiling prices regardless of where stores are located, if they did so on the base date, O.P.A. has ruled in amendment No. 8 to R No. 82, effective June 5.

Cast Iron Pipe—An increase of 4½ per cent over existing manufacturers' maximum prices for cast iron soil pipe and fittings has been announced by the O.P.A. Under this action, jobbers are permitted to add the same percentage increase to their maximum prices. Retail ceilings will continue at the current level and will not be affected by this action.

Clay Conduit—Resellers of electrical clay conduit, used in electrical transmission lines, have been permitted to raise their ceilings by $3.25 per ton in O.P.A. amendment No. 41 to order No. 1 under R No. 592, effective June 5.

Copper Castings—Increases in the maximum prices of copper and copper-base castings to offset cost increases of the metals used have been authorized by O.P.A. in an amendment to be issued to RPR No. 125.

Copper Wire—Manufacturers of copper wire and cable and copper-alloy and copperclad wire and cable have been provided with formulas by which they may automatically adjust their ceiling prices to cover their increased costs resulting directly from the copper price increases. The document putting these actions into effect will be an amendment to MPR No. 82.

Douglas Fir—Mill ceiling price increases averaging approximately $3.50 per M f.b.m. on Douglas fir and other West Coast lumber certified by the C.P.A. as essential to the veterans' housing program have been authorized by O.P.A. in second RR No. 26, effective at once.

Electrical Machinery—Suspension of price control on additional electrical machinery and equipment items not included in the machinery and equipment de-control action on April 8 has been authorized by O.P.A. in amendment No. 24 to supplementary order No. 129, effective immediately.

Fir Millwork—Manufacturer's ceiling prices for fir stock millwork have been raised by O.P.A. to 26 and 29.6 per cent above existing ceilings in amendment No. 4 to R No. 589, effective at once.

Gears—Manufacturers of gears, pinions, sprockets and speed reducers have been granted an increase of 13 per cent in their maximum prices in order No. 637 under RR No. 136, effective at once.

Heating Materials — Manufacturers and user prices for cast iron boilers, boiler-jackets and repair parts have been increased about 15 per cent, and user prices for cast iron radiators 4 per cent, as a result of wage-price increases granted by O.P.A. Amendment No. 9 to R No. 272, and amendment No. 13 to order No. 1 under R No. 591 are effective immediately.

Industrial Materials—Suspension of price control over several types of industrial costs has been ordered by O.P.A. as to copper engravers' sheet and plate, nonferrous lockseam tubing, metal washers, steel strapping, industrial steel wool, steel gas cylinders and asbestos textiles. Amendment No. 22 to supplementary order No. 129 is effective at once.

Lead Products—Producers of metallic products made from lead or lead alloys may increase their base period "freeze" prices 1.75 cents a lb. of lead contained in the product, to compensate for the 1.75 cents a lb. increase in lead prices, an O.P.A. amendment to SR No. 14G and an amendment to SR No. 14G will be effective June 3.

Lumber—Extension of the individual adjustment procedure provided for some individual producers of lumber to cover producers of hardwood flooring, cedar closet lining and West Coast cooperate has been authorized by O.P.A. in amendment No. 2 to supplementary order No. 128, effective June 5.

Metal Culverts—Manufacturers' ceiling prices for corrugated metal culverts have been increased 7 per cent from maximum prices frozen at March, 1942, levels, by O.P.A. in amendment No. 8 to SR No. 14G, effective at once.

Metal Culverts—Reconverting manufacturers of metal culverts have been given a profit factor of 2 per cent to use in calculating reconversion ceiling prices, in O.P.A. amendment No. 15 to supplementary order No. 118 and amendment No. 10 to supplementary order No. 119, both effective June 5.

Millwork — Manufacturers of special millwork have been granted until June 3 to file reports on their pricing methods with O.P.A. under amendment No. 1 to R No. 608, effective as of May 3.

Oak Flooring—Retail ceilings on all oak flooring have been raised by O.P.A. to reflect approximately the dollar-and-cents amounts by which mill prices were increased in a recent O.P.A. action. Beech flooring produced in certain areas and miscellaneous hardwood flooring, such as pecan and gum, also are affected by amendment No. 22 to second RR No. 215, effective immediately.

Pig Iron—O.P.A. permits producers of pig iron to charge and collect the present ceiling price on deliveries, subject to the condition that the purchaser agrees to pay also the amount of any ceiling price increase that may be granted later by O.P.A. Order No. 9 to RPS No. 10 is effective at once.

Power Tools—Manufacturers have been given an interim increase of 12 per cent in ceilings for portable pneumatic power driven tools, in O.P.A. order No. 635 under RR No. 136, effective June 1.

Roofing—O.P.A. has authorized roofing material manufacturers to ship asphalt and tarred roofing products into the Texas tornado area without the necessity of equalizing freight. Freight must hold a triple-A priority from C.P.A. before they are entitled to the higher price resulting from amendment No. 9 to RPS No. 45.

Southern Hardwood—Mill ceiling increases averaging $5.90 per M f.b.m., or 11 per cent on all hardwood lumber produced in the south central hardwood region, with the exception of construction grades, already given increases, are contained in O.P.A. amendment No. 21 to regulation No. 155, effective at once.

Steel Scrap—Sales of railroad steel scrap prepared by a dealer or passing through a dealer's yard may be made at railroad scrap maximum prices if the seller complies with two requirements, O.P.A. has ruled in amendment No. 6 to regulation No. 4 effective June 5.

Tools—The pricing system provided for specified sales by manufacturers of tools, dies, jigs, fixtures, molds and patterns on April 26, has been extended when these industrial equipment items are made and used specifically with any product and sold to the buyer of that product, in O.P.A. amendment No. 40 to RR No. 136, effective at once.

Woodworking Machinery — Manufacturers of woodworking and timber working machinery have been given an interim price increase of 10 per cent over base maximum prices. O.P.A. announced the increase will be formalized in order No. 636 under RR No. 136, as of May 29.

Equipment and Supplies

LOCOMOTIVES

The UNION PACIFIC has purchased a 3-unit, 6,000-hp., double-end, Diesel-electric locomotive from the Fairbanks-Morse Company. Prior to purchasing the locomotive, it was operated in test service for five months on both passenger and freight runs, and is at present geared for passenger service.

FREIGHT CARS

The CHICAGO, INDIANAPOLIS & LOUISVILLE is inquiring for 500 50-ton 40½-ft. steel-sheathed box cars and 150 50-ton 53½-ft. steel-underframed flat cars. The first lot may be the conventional box car of the Association of American Railroads, or may be lightweight high tensile box cars.

IRON AND STEEL

The READING has ordered 2,750 tons of structural steel from the Bethlehem Steel

Corporation for use in the construction of a bridge at Reading, Pa.

SIGNALING

The NASHVILLE, CHATTANOOGA & ST. LOUIS has placed an order with the Union Switch & Signal Co., covering the signaling materials for a centralized traffic control system between Junta, Ga., and Chattanooga, Tenn., 87 miles of single track, with the C. T. C. machine located at Dalton within the controlled territory, 50 miles East of Chattanooga. Signals will be of the color-light P-5 type, with Style M-22B dual control electric switch movements. The main line non-interlocked switches will be equipped with SL-6A electric locks controlled from the C. T. C. machine, with the order also covering relays, rectifiers, transformers, housings, etc. The construction will be done by the forces of the railroad.

Supply Trade

American Locomotive's Backlog of Foreign Orders

The American Locomotive Company has built 238 locomotives for four foreign countries since the first of the year and orders are on hand for a total of 450 units, involving seven foreign nations, it was announced by R. B. McColl, president. In addition, the company has on hand 22 inquiries, involving an undisclosed number of locomotives from 14 foreign nations. The figures show a heavier demand for steam locomotives than for Diesel-electric locomotives in most of the world markets, except in this hemisphere, the announcement said.

Sales and shipments to Central and South America are on the upgrade. Even in Europe and in nations heretofore served chiefly by the manufacturers of Europe, there is said to be a growing demand for American construction. Evidence of this is seen in the case of Portugal, which American Locomotive began supplying last year, the first time that country had purchased locomotives in the Western hemisphere.

The breakdown, as of May 15, shows the following units already shipped or on order with the company for the export trade since the first of the year: France, 400; Belgium, 181; China, 35; Brazil, 22; Mexico, 22; Nigeria, 14; Russia, 13; and Honduras, 1. The United States Government still is a purchaser of locomotives for use in foreign nations, which is shown by the recent Treasury Department order for 35 of the company's steam locomotives, which will be shipped to China. Shipments are continuing on a War Department contract for locomotives to be used in France and will be completed this year. On this order, 239 of the company's locomotives have been shipped, with 21 still to be delivered.

"Our locomotive manufacturers had very few reconversion problems, although they were heavily engaged in the production of ordnance," Mr. McColl said in releasing the figures. "Locomotive building continued throughout the war at government direction and when the war was over, the plants of the major builders were ready to resume peacetime pursuits. . . .

"While great advances have been made in the development of steam locomotives to degrees of efficiency never thought possible, the building of steam motive power is still on a hand-tailoring basis. The Diesel, however, is being built on a mass production scale, and we are currently completing the installation of what we believe is the finest Diesel locomotive building plant in the world at Schenectady, N. Y.

"However, motive power research goes on. Our engineering research laboratory at Schenectady no more condones the idea that the ultimate in motive power, steam or Diesel, has come than does the chemist or physicist believe that nuclear development is at an end."

Ray P. McGovern has joined the staff of the **Brickseal Refractory Company** to head the railroad department, with headquarters in Chicago.

Charles W. T. Stuart has been elected vice-president in charge of sales of the **Safety Car Heating & Lighting Company.**

Announcement has been made of organization changes affecting the railroad and construction set-up of **Armco Drainage & Metal Products, Inc.,** Middletown, Ohio, a subsidiary of the American Rolling Mill Company. The Armco Railroad Sales Company, formerly handling the sale of both sheets and drainage products, has been dissolved and the sale of drainage products to railroads is now the responsibility of the firm's various divisions. Similarly, the activities of the construction division have been decentralized and are being handled by the many Armco drainage divisions.

E. T. Cross, who for the past 19 years has been engaged in railroad drainage sales and the construction work, has been transferred to the general office staff as a vice-president. He will serve as a coordinator of construction activities for Armco, as well as for other subsidiaries of the parent company. Mr. Cross also will serve as counselor and advisor in connection with the sale of fabricated products to the railroads.

W. B. Roof, formerly division engineer of the construction division, will be Mr. Cross's assistant.

D. R. Baird, superintendent of the Middletown district of the construction division, will be with the O'Neall division at South Bend, Ind., as construction superintendent. **J. D. Faylor,** construction superintendent of the Des Moines (Iowa) district, has been transferred to the Iowa-Nebraska division as division engineer, and will have charge of all construction work and railroad sales for that division. His headquarters will remain at Des Moines. **H. R. Speir,** superintendent of the construction division at Houston, Tex., has been transferred to the same job for the southwestern division, also at Houston. **C. E. McGraw** has been appointed construction superintendent of the Hardesty division at Denver, Colo. **C. M. Colvin,** construction superintendent for the California, Oregon and Washington territory, will continue these duties and will also assist **K. A. Smith,** who has been appointed manager of railroad sales for a new district at Berkeley, Calif. **J. F. Hunter** will superintend construction work for the Dixie division with headquarters at Atlanta, Ga.

Nick Rozema will have charge of construction work for the Missouri-Kansas division, with headquarters in Topeka, Kan. **P. O. Hansen** heads the construction department of the central division at Middletown. Heading sales of drainage products to railroads in the eastern division, is **W. O. Robertson,** with headquarters in Baltimore, Md. He will also be in charge of construction activities. **G. R. Betts** was transferred to the O'Neall division as manager of railroad sales, and **N. A. Powell** goes to the southwestern division in the same capacity. New railroad sales managers have been added to the staffs of the Armco divisions. **Ralph N. Tracy** is in charge of the Hardesty division, and **H. S. Claybough** became railroad sales manager in the northwestern division at Minneapolis, Minn.

In the central division, **C. H. Anderson** becomes manager of railroad sales, with headquarters in Cleveland, Ohio. **Van W. Davis** has been appointed manager of the railroad sales for the Dixie division. **Felix Truss** is in charge of railroad sales for the Missouri-Kansas division.

Frank K. Metzger has been appointed manager of railroad sales for the **Midvale Company,** with headquarters in Philadelphia, Pa.

Joseph M. Welles has been appointed to represent the **Rust-Oleum Corporation** in the railway supply field for southern California, with headquarters at 5421 Santa Fe avenue, Los Angeles, Calif.

W. H. Waters has been appointed assistant vice-president of the **American Car & Foundry Export Co.** Mr. Waters had been connected with the purchasing department since 1940 as liaison man between the company and the United States Army Ordnance Department.

A. P. Hall has been elected vice-president of the **American Chain & Cable Co., Inc.** Before joining the company in 1944, he had been in the steel industry for 22 years. He will continue his present duties as general manager of sales, and his headquarters will remain at 230 Park Avenue, New York.

R. A. Mylius, formerly assistant electrical engineer with the Virginian, has joined the **Ohio Ferro-Alloys Corporation** of Canton, Ohio. Mr. Mylius will spend three months at the company's Tacoma, Wash., plant, and three months at the plant in Philo, Ohio, after which he will be stationed permanently in Canton.

The **Link-Belt Company,** Chicago, has opened three new sales offices, at Moline, Ill., Cincinnati, Ohio, and Birmingham, Ala., as a means of offering a better postwar service in these cities. Those in charge of the branches are, respectively, **M. J. Parykaza, L. R. Clark,** and **C. C. Wiley,** all of whom carry the title of district sales engineer.

The **Gaines Hardwood Lumber Company** of St. Louis, Mo., has been appointed distributors of Formica decorative laminated plastics materials in the St. Louis area,

J. Roger White, vice-president in charge of sales and advertising of **The Formica Insulation Company,** Cincinnati, Ohio, laminated plastics manufacturers, has announced.

The **Luria Steel & Trading Corp.** has acquired the **Philip W. Frieder Company** of Cleveland, Ohio, and **Erman-Howell & Co., Inc.,** of Chicago. The newly acquired companies will operate as divisions of Luria Steel & Trading. The officers and personnel of the two new divisions will be unchanged. Luria Steel & Trading has opened offices in Pittsburgh, Pa., at 324 Fourth avenue. This office will be in charge of **E. N. Dittig,** district manager.

The Eaton Manufacturing Company, Massillon, Ohio, has announced the addition of four men to the sales department of the Eaton Reliance division: **Ralph O. Amsden, Jr.,** with headquarters at the company's Detroit office; **John S. Kerr,** with headquarters at the company's Cleveland office; **John L. Knott,** with headquarters at the company's New York office; and **Clifford A. Esinhart,** western railroad representative, with headquarters at the company's Chicago office.

Plans for a new $2,000,000 non-ferrous foundry at Meadville, Pa., have been announced by T. W. Pettus, president of the National bearing division of the **American Brake Shoe Company.**

The new plant will replace the old foundry at Meadville and is part of the company's $12,500,000 expansion program. It will produce bronze bearings and castings, and its facilities will provide additional capacity over the old plant. Construction of the concrete and brick buildings is expected to start on July 1, 1946, and it will be ready for operation by April 1, 1947.

Thomas D. Jolly, vice-president and chief engineer of the **Aluminum Company of America,** has announced the company's plans for the construction of a large new plant near Davenport, Iowa, for the rolling of aluminum sheet and plate. The plant, which is to cost more than $30,000,000, will have capacity to produce more than ten million pounds of sheet and plate a month when placed in operation. Construction is scheduled to begin as soon as the project has been approved by the Civilian Production Administration, and completion of the plant will require approximately 18 months. Under present plans, Mr. Jolly said, the new plant will be able to turn out wider aluminum sheet than any other aluminum rolling mill in the world.

The Barco Manufacturing Company, Chicago, has announced the appointment of new sales representatives for Barco gasoline hammers. **D. W. Jacquays, Phoenix,** Ariz., will cover the state of Arizona, except Mojave and Yuma counties, and supplement the service of the **Francis Wagner Company,** El Paso, Tex., which extends into Arizona. **The Brown Machinery Company,** Oklahoma City, Okla., will cover the state of Oklahoma. **Fletcher Equipment & Supplies,** New Orleans, La., will cover southern Louisiana and southern Mississippi. **A. B. Pinson** becomes sales representative for the south Atlantic states, and **W. S. Withers** for northeastern Atlantic states.

Richard O. Blankmeyer, Kenneth Knotts, Leslie E. Bluhm, Al Wrigley, Jack Godley, and **William G. Tawse,** have been appointed field engineers for the **Nelson Sales Corporation,** Lorain, Ohio.

Mr. Blankmeyer will have headquarters in Fayetteville, N. Y., and will cover the upstate New York and northern Pennsylvania area. Mr. Knotts, with headquarters in Pittsburgh, Pa., will cover the western Pennsylvania, southeastern Ohio, western Maryland, and West Virginia area. Mr. Bluhm will cover the Delaware, eastern Maryland, Washington, D. C., Virginia, and North Carolina area, from headquarters in Hyattsville, Md. Mr. Wrigley and Mr. Godley will handle the Detroit area jointly, with the former also covering northeastern Michigan, and Mr. Godley also covering northwestern Ohio and the Fort Wayne, Ind., territory. Both will have headquarters in Detroit, Mich. Mr. Tawse, with headquarters in Los Angeles, Calif., will cover southern California.

OBITUARY

Tom W. Aishton, district sales manager at Chicago for the National Malleable & Steel Castings Co., died on June 1, in an Evanston (Ill.) hospital.

Construction

ARGENTINE STATE RAILWAYS.—These lines, it is reported, have awarded a contract to Fielding & Pratt, Ltd., Gloucester, England, for the construction of a plant at Buenos Aires, Argentina, for the manufacture of railway tires and axles. The estimated cost is $1,250,000.

ATLANTIC COAST LINE.—This road has applied to the Interstate Commerce Commission for authority to construct an 18-mile branch in Palm Beach County, Fla., between a point near Lake Harbor to facilities of the Okeelanta Growers and Processors Cooperative. The proposed line would serve agricultural and sugar interests in the area.

SEABOARD AIR LINE.—This road has awarded a contract for work on an extension to the existing Diesel storehouse at Jacksonville, Fla. The probable cost of this project is $84,000. A contract for labor to build an industrial spur and lay tracks near Mulberry, Fla., also has been awarded. The probable cost of this project is $118,000.

CHESAPEAKE & OHIO.—Reporting in the reopened Finance Docket No. 14850 proceeding, the Interstate Commerce Commission (with Commissioners Rogers and Alldredge dissenting) has affirmed Division 4's prior report authorizing this road to construct a 14.6-mile line from Jenkins, Ky., into Virginia to serve the so-called Meade Fork mine being opened by the Clinchfield Coal Corporation; but in doing so it has imposed a condition stipulating that no interlocking directorates shall exist between the Allegheny Corporation, the C. & O., or its affiliated companies, on the one hand, and the coal corporation, on the other, unless authorized by the commission. Division 4's report was noted in the *Railway Age* of September 15, 1945, along with another decision wherein the division authorized construction of a line in the same general territory by the Carolina, Clinchfield & Ohio, which opposed the C. & O. project.

SMITHFIELD TERMINAL.—This road has applied to the Interstate Commerce Commission for authority to construct and operate approximately 2,800 ft. of track, including branches, in the vicinity of Newport News, Va., and Smithfield. The applicant also plans to operate car floats a distance of 12.3 miles across the James river. The road will finance the proposed construction through the sale at par of its common stock to a restricted group of persons, all of whom reside in the area where the new line will be installed.

SOUTHERN.—This road has scheduled an improvement and construction program which is to be completed at a cost of $430,000 and consists of the following projects: Construction of an industrial switching lead track at Charlotte, N. C., $20,800; widening of a transfer platform and installation of power-operated crossover bridges at Atlanta, Ga., $47,000; replacement of a timber trestle with reinforced concrete pile trestle at Benaja, N. C., $70,000; renewal of Bull Run bridge at Heiskell, Tenn., $132,100; grade revision and renewal of a timber trestle at Pocahontas, Tenn., $41,000; filling trestle near Aldrich, Ala., $33,000; construction of additional yard tracks at Atlanta, Ga., $41,800, contract to R. T. Smith, Atlanta, Ga., and to the William A. Smith Construction Company, Houston, Tex.; and extension of team yard at Atlanta, $43,600.

Abandonments

BAY POINT & CLAYTON.—This road has applied to the Interstate Commerce Commission for authority to abandon its entire line from Port Chicago, Calif., to Cowell, a distance of 9 miles.

KERSEY.—This road, operated by the Pittsburg, Shawmut & Northern, has applied to the Interstate Commerce Commission for authority to abandon its entire line, the main segments of which, including sidings, extend 19.59 miles between Paine, Pa., and Cardiff; Weedville, Pa., and Brown's Run, and Force, Pa., and Tyler.

PITTSBURG, SHAWMUT & NORTHERN.—This road has applied to the Interstate Commerce Commission for authority to abandon its entire line, including all branches. The main line extends from Wayland Junction, N. Y., to Hyde, Pa., 144.5 miles. The road has been in receivership since August 1, 1905.

WYOMING.—This road has applied to the Interstate Commerce Commission for authority to abandon its entire line extending from Buffalo, Wyo., to Claremont, 28.5 miles.

Financial

ALTON.—*Reorganization.*—Federal Judge John P. Barnes on May 28 issued at Chicago a formal order approving the reorganization plan of the Alton. The plan provides for this road to be merged with the Gulf, Mobile & Ohio, subject to the approval of the Interstate Commerce Commission and the approval of participating security holders.

BOSTON & MAINE.—*Acquisition.*—This road has applied to the Interstate Commerce Commission for authority to acquire control of the St. Johnsbury & Lake Champlain through acquisition of its capital stock.

CHESAPEAKE & OHIO.—*Equipment Trust Certificates.*—This road has applied to the Interstate Commerce Commission for authority to assume liability for $1,500,000 of equipment trust certificates to finance in part the acquisition of 700 50-ton, all-steel hoppers from the American Car & Foundry Company, estimated to cost a total of $1,990,170. The certificates would be dated July 1, 1946, and mature in 10 equal annual installments beginning July 1, 1947. They would be sold on the basis of competitive bids, the rate not to exceed 1¾ per cent, and no bid to be less than 99 per cent of par.

CHICAGO, AURORA & ELGIN.—*Reorganization.*—Confirmation of this road's reorganization plan has been deferred until June 14 by Federal Judge John P. Barnes in Chicago after the road's trustee asked more time to settle wage issues with employees.

CINCINNATI, NEW ORLEANS & TEXAS PACIFIC.—*New Director.*—Frank T. Sturtevant, freight traffic manager of the Baltimore & Ohio, Cincinnati, Ohio, has been elected a director of this company to succeed Morison R. Waite, who recently resigned.

MISSOURI-KANSAS-TEXAS.—*New Director.*—A. Liebscher, president of Dittlinger Mills, New Braunfels, Tex., has been elected to the board of directors of this road, succeeding James I. Bush, New York, resigned.

NASHVILLE, CHATTANOOGA & ST. LOUIS.—*Refunding.*—Division 4 of the Interstate Commerce Commission has authorized this road to issue $15,000,000 of 3 per cent first mortgage bonds, series B, to be sold at 99.319, the bid of a syndicate headed by the First Boston Corporation which had been accepted subject to commission approval. The proceeds will be applied toward the redemption on August 1 of a similar amount of series A first mortgage 4 per cent gold bonds, due February 1, 1978. The new issue, to be dated February 1, 1946, will mature February 1, 1986. The commission also authorized the Louisville & Nashville to assume liability as guarantor of the new issue.

PENNSYLVANIA-READING SEASHORE LINES.—*Extension of Bonds.*—The West Jersey & Seashore has applied to the Interstate Commerce Commission for authority to extend for 10 years from July 1, 1946, the maturity date of its $2,325,000 3 per cent first consolidated mortgage bonds and to deliver the bonds, when so extended, to the Pennsylvania and Reading. The Pennsylvania-Reading Seashore Lines has applied to the commission for authority to assume obligation as guarantor of the bonds.

Average Prices Stocks and Bonds

	June 4	Last week	Last year
Average price of 20 representative railway stocks..	66.31	66.96	55.88
Average price of 20 representative railway bonds..	100.57	100.63	99.09

Dividends Declared

Allegheny & Western.—Guaranteed, $3.00, semi-annually, payable July 1 to holders of record June 20.

Atchison, Topeka & Santa Fe.—5% non-cumulative preferred, $2.50, semi-annually, payable August 1 to holders of record June 28.

Chesapeake & Ohio.—75¢, quarterly, payable July 1 to holders of record June 7.

Cincinnati, New Orleans & Texas Pacific.—$3.00, payable June 24 to holders of record June 8.

Dayton & Michigan.—8% preferred, $1.00, quarterly, payable July 2 to holders of record June 15.

Delaware.—$1.00, semi-annually, payable July 1 to holders of record June 15.

Lykens Valley R.R. & Coal.—40¢, semi-annually, payable July 1 to holders of record June 15.

Mobile & Birmingham.—4% preferred, $2.00, semi-annually, payable July 1 to holders of record June 1.

New York & Harlem.—$2.50, semi-annually, payable July 1 to holders of record June 14.

Northern Central.—$2.00, semi-annually, payable July 15 to holders of record June 29.

Philadelphia & Trenton.—$2.50, quarterly, payable July 10 to holders of record July 1.

Reading.—2nd preferred, 50¢, quarterly, payable July 11 to holders of record June 20.

West Jersey & Seashore.—$1.50, semi-annually, payable July 1 to holders of record June 15; Special Guaranteed, $1.50, semi-annually, payable June 1 to holders of record May 15.

Western New York & Pennsylvania.—Common, $1.50; 5% preferred, $1.25, both semi-annually and both payable July 1 to holders of record June 29.

Railway Officers

Extensive Changes on B. & O.

The Baltimore & Ohio and the Baltimore & Ohio Chicago Terminal have announced the following changes in personnel, subsequent to retirements:

EXECUTIVE

H. B. Voorhees, vice-president and executive representative of the Baltimore & Ohio at Chicago and president of the Baltimore & Ohio Chicago Terminal, retired on May 31, after 44 years of service. **Roy B. White,** president of the B. & O., was recently elected president of the B. & O. C. T. and **G. Murray Campbell,** general freight traffic manager of the B. & O., was elected vice-president and executive representative of the B. & O. in Chicago, succeeding Mr. Voorhees. Other officials of the B. & O. whose jurisdiction has been extended over the Baltimore & Ohio Chicago Terminal are **C. W. Van Horn,** vice-president in charge of operation and maintenance, and **E. H. Burgess,** vice-president and general counsel.

L. C. Sauerhammer, assistant to vice-president in charge of operation and maintenance of the B. & O. at Baltimore, Md., has retired after 46 years with the company, and **J. H. Hande,** auditor capital expenditures, has been appointed to succeed him.

FINANCIAL, LEGAL & ACCOUNTING

William A. Hall has been appointed assistant secretary and assistant treasurer of the Baltimore & Ohio Chicago Terminal at Chicago to succeed **H. H. Hall,** who retired on June 1.

F. L. Schepler, general freight claim agent of the Baltimore & Ohio at Baltimore, has retired after 47 years of B. & O. service and has been succeeded by **C. E. Thrasher,** formerly assistant general freight claim agent. **C. E. Morley,** special engineer, auditor of capital expenditures office of the B. & O., has been appointed auditor of capital expenditures succeeding **J. H. Hande,** whose new position is noted elsewhere.

OPERATING

A. S. Waller, assistant superintendent of the St. Louis division, Western region of the B. & O., at Washington, Ind., has been promoted to superintendent of the Newark division, succeeding Mr. Purdy, whose promotion is noted elsewhere. **J. F. Robbert,** trainmaster on the Ohio division at Chillicothe, Ohio, becomes assistant superintendent at Washington, Ind., and is succeeded by **J. R. Potter,** formerly assistant trainmaster at Chillicothe. **William E. Boyland,** trainmaster at Connellsville, Pa., has retired after 48 years with the railroad, and is succeeded by **Jerry L. Lowney,** the terminal trainmaster at Connellsville. **Paul V. Colborn,** general yardmaster, succeeds Mr. Lowney as terminal trainmaster.

The Chicago Terminal region of the Baltimore & Ohio has been established at Chicago, and **W. C. Baker,** general superintendent transportation at Baltimore, has been appointed its general manager. The region consists of the B. & O. C. T. and the B. & O. proper west of Pine Junction, Ill. **John Edwards, Jr.,** assistant general superintendent transportation of the Baltimore & Ohio, has been promoted to general superintendent transportation succeeding Mr. Baker, with headquarters as before at Baltimore. **L. E. Thornton** has been appointed superintendent of the B. & O. C. T., succeeding **W. R. Galloway, Jr.,** who has been appointed assistant general superintendent transportation of the B. & O. with headquarters in Baltimore, succeeding Mr. Edwards.

TRAFFIC

J. W. Phipps, general freight agent of the Baltimore & Ohio at Philadelphia, Pa., has been promoted to general freight traffic manager, with headquarters at Baltimore, to succeed **G. Murray Campbell,** whose election to vice-president and executive representative of the B. & O. at Chicago is announced elsewhere in these columns. Other appointments in the freight traffic department follow:

John W. Hartzell, general foreign freight agent, has been made general freight agent at Philadelphia, to succeed Mr. Phipps. **J. H. Hague** appointed freight traffic manager in charge of sales and service for the system, and **John C. McGohan** appointed freight traffic manager in charge of rates for the system.

Both will have headquarters at Baltimore. **W. M. Haenssel** has been appointed general freight agent at St. Louis, Mo., in the position formerly held by Mr. Hague, and **James T. Lean,** district freight agent at Baltimore, becomes assistant general freight agent, at Cleveland, Ohio, in the position formerly held by Mr. Haenssel. **A. B. Calloway,** formerly industrial agent at Cincinnati, Ohio, has been promoted to the position of district freight agent at Baltimore, succeeding Mr. Lean. **A. C. Todd** is appointed industrial agent with headquarters at Cincinnati, to succeed Mr. Calloway. **Frank M. White** appointed general foreign freight agent, with headquarters at Baltimore, takes the position formerly held by Mr. Hartzell, and **W. J. Honan** has been appointed assistant foreign freight traffic manager at New York. **D. C. Hale** becomes foreign freight agent at New York in the position formerly held by Mr. Honan, and **A. O. Robinson** has been appointed foreign freight agent at Baltimore. **Harold Williams,** formerly assistant general freight agent at Baltimore, is appointed general freight agent there. **Harry A. Witte,** assistant general freight agent, has also been appointed to general freight agent at Baltimore. **J. T. Wood** and **C. J. Curran** have been promoted to the position of assistant general freight agent, both with headquarters at Baltimore. **W. F. Bollman** is appointed assistant freight traffic manager at Pittsburgh, Pa., and **W. F. Schugardt** becomes district freight representative at Buffalo, N. Y.

ENGINEERING & SIGNALING

J. W. Purdy, superintendent of the Newark division, has been promoted to engineer of maintenance at Cincinnati, to succeed **S. A. Jordan,** who has retired from active duty after 54 years with the B. & O. **F. D. Batchellor,** division engineer, Newark, Ohio, has retired after 44 years of service with the B. & O., and his successor is **J. T. Hoelzer,** now assistant division engineer at Cincinnati.

EXECUTIVE

W. R. Rouse, assistant general western counsel of the Union Pacific at Omaha, Neb., has been promoted to assistant vice-president, with the same headquarters.

A. C. Berg, assistant to the western traffic manager of the Great Northern at Seattle, Wash., has been advanced to assistant to the vice-president, traffic, with headquarters at St. Paul, Minn., succeeding **F. P. McCarty,** whose promotion to assistant general freight agent, with headquarters as before at St. Paul, is reported elsewhere in this issue.

J. A. Russell, whose appointment as assistant to the vice-president in charge of real estate, purchases and insurance, of the Pennsylvania, with headquarters at Philadelphia, Pa., was announced in the May 4 *Railway Age,* was born at Philadelphia and was graduated from the University of Pennsylvania in 1913. He entered railway service first by working during summer vacations, then in June, 1913, was appointed assistant engineer for the Pennsylvania's water companies, resigning in 1916 to become an instructor at the University of Pennsylvania. He returned to the Pennsylvania water companies in 1917, soon leaving to become a second lieutenant, Engineering Corps, U. S. Army, and assistant to chief engineer, 86th division. He

J. A. Russell

was advanced to first lieutenant, commanding Company B, 311th Engineers, in 1918, discharged in 1919, and rejoined the Pennsylvania water companies. During 1924 and 1925, Mr. Russell engaged in private civil engineering practice, and in 1925 returned to the Pennsylvania as engineer of water service. He was promoted to manager of water service in 1932, then to general real estate agent in 1940. He maintained the latter post until his recent advancement.

Carl H. Tabor, general manager of the Norfolk & Western, with headquarters at Roanoke, Va., has been made vice-president and general manager. Mr. Tabor was born at Baptist Valley, Va., on September 30, 1893, and began his railway career as a water boy for the Norfolk & Western in 1907, becoming timekeeper in 1909, and yard clerk at Wilcoe, W. Va., in 1912. Following 2 years of overseas service during World War I, he returned to the

Carl H. Tabor

Norfolk & Western in 1919 as assistant yardmaster at Wilcoe, then was promoted to yardmaster at Iaeger, W. Va., in 1922, and to general yardmaster at Wilcoe in 1925. In 1927, he was advanced to assistant trainmaster, Pocahontas division, and subsequently to terminal trainmaster at Bluefield, W. Va., in 1933 and to trainmaster, Pocahontas division, in 1934, transferring to the Scioto division in 1936. He was appointed superintendent of the Pocahontas division later that year and transferred to the Scioto division in 1938, then advanced to assistant general superintendent of the western general division at Bluefield in 1939, and in 1940 was promoted to general superintendent there. Mr. Tabor was appointed general manager at Roanoke in January, 1942.

H. R. Sampson, whose election to vice-president in charge of traffic on the Chicago & Eastern Illinois, with headquarters at Chicago, was reported in the *Railway Age* of May 18, was born at Washington, Ill., on December 6, 1897, and was graduated in 1922 from the James Milliken University, Decatur, Ill. He entered railroad service in June, 1922, as a stenographer in the engineering department of the Pennsylvania at Indianapolis, Ind., leaving after a few months to accept a similar position in the Illinois Central's passenger department at Chicago. In October, 1923, Mr. Sampson became an I. C. passenger representative at Minneapolis, Minn., and

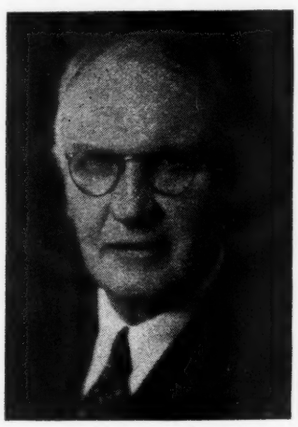
H. R. Sampson

was ticket agent at Sioux City, Iowa, from March until May, 1924. In the latter month he was transferred back to Chicago where he served as general clerk in the general passenger office until May, 1927. Mr. Sampson then left the I. C. to become traveling passenger agent for the C. & E. I., a position which he retained until November, 1935, except for 1929-1931 when he was manager of that road's Chicago travel bureau. In November, 1935, Mr. Sampson became general agent, passenger department, and in July, 1938, he was promoted to general passenger agent. In June, 1942, he was given a six-month leave of absence to become assistant director of the division of traffic movement of the Office of Defense Transportation. He returned to the C. & E. I., in January, 1943, and two months later he was promoted to passenger traffic manager. In December, 1944, he was advanced to general traffic manager, the position he held at the time of his recent election.

O. N. Harsted, assistant vice-president, system, and general manager, eastern lines, of the Chicago, Milwaukee, St. Paul &

Pacific, at Chicago, has been elected vice-president, operations, with the same headquarters, succeeding **J. T. Gillick,** who has been relieved of his duties at his own request but will continue to serve the road as a consulting vice-president. **J. P. Kiley,** assistant general manager, Lines East, has been promoted to assistant to the president, with headquarters at Seattle, Wash., replacing **J. N. Davis,** who has retired as assistant to the president but will continue as general attorney. A biographical sketch and photograph of Mr. Gillick appeared in the *Railway Age* of December 15, 1945, at the time of his promotion to vice-president, operations.

Edward W. Mason, whose retirement as vice-president and general manager of the Western Pacific was reported in the *Railway Age* of May 18, was born at Moberly, Mo., on March 23, 1877, and entered railway service in June, 1893, as



Edward W. Mason

a call boy on the Northern Pacific at Tacoma, Wash. He subsequently served in various capacities at different points on the road until he was promoted to trainmaster, with headquarters at Seattle, Wash. In November, 1909, Col. Mason went with the Western Pacific as superintendent of telegraph, and on May 1, 1911, he was appointed division superintendent, with headquarters at Sacramento, Cal. On August 1, 1916, he was advanced to general superintendent at San Francisco, Cal., serving in that capacity until June 1, 1918, when he entered the armed forces during World War I as a major of the Corps of Engineers. Later he was promoted to the rank of lieutenant-colonel, returning from France in 1919, when he was appointed manager of the Western Pacific by the U. S. Railroad Administration. When that road was returned to private ownership in November, 1921, he was elected to the position he held at the time of his retirement.

FINANCIAL, LEGAL AND ACCOUNTING

J. V. Gilmour, assistant to controller for the Southern Pacific, has been appointed assistant controller, with headquarters at New York.

Theodore C. Whiteman, general attorney of the Bessemer & Lake Erie, with headquarters at Pittsburgh, Pa., has retired after 45 years' service. Messrs. **Whiteman, Voorhies, Dilley** and **Keck,** of Greenville, Pa., have been appointed general attorneys of the company, effective June 1.

James C. Bonar, chief clerk to the president of the Canadian Pacific, has been named assistant secretary of the company, with headquarters as before at Montreal, Que.

Oliver M. Hepler, assistant comptroller of the Chesapeake & Ohio, with headquarters at Richmond, Va., has been appointed comptroller, with headquarters at Cleveland, Ohio, succeeding **J. Fred Andrews,** who assumes the duties of auditor at Richmond.

V. N. Wahlberg, assistant general auditor of the Great Northern at St. Paul, Minn., has been promoted to general auditor, with the same headquarters, succeeding **C. W. Tilton,** who has retired. **H. J. Knaff,** general accountant, has been advanced to assistant general auditor, with headquarters as before at St. Paul, relieving Mr. Wahlberg. **W. N. Norris,** tax accountant, has been promoted to assistant controller at St. Paul.

Horace L. Walker, whose appointment as general counsel of the Chesapeake & Ohio, with headquarters at Richmond, Va., was announced in the May 4 issue of *Railway Age,* was born at Lancaster, Ky., on March 21, 1888, and was graduated from the University of Kentucky and the Jefferson School of Law. He began his railway service in 1917 as an attorney for the Southern at Washington, D. C., leaving to enter the United States Army in 1918. After discharge from the air service in 1919, he rejoined the Southern as assistant

Harris and Ewing
Horace L. Walker

vice-president and general counsel, becoming commerce counsel at Washington in 1920. In 1935, Mr. Walker went into the service of associated railways and steamship companies at Washington as attorney, then in 1938 went with the Chesapeake & Ohio, the Pere Marquette, and the New York, Chicago & St. Louis as general attorney, with headquarters at Richmond, Va. He was advanced to general solicitor there in 1941, which post he maintained until his recent promotion.

OPERATING

Margaret L. Irwin, special assistant to the vice-president, operations, of the Atchison, Topeka & Santa Fe, with headquarters at Chicago, has resigned.

H. Boller, personnel officer of the Chicago Great Western at Chicago, has been promoted to general superintendent, with the same headquarters, a newly-created position.

Frederick W. Kirchner, whose promotion to division superintendent of the Louisville & Nashville, with headquarters at Knoxville, Tenn., was reported in the *Railway Age* of May 25, was born at Louisville, Ky., on October 4, 1899. He entered railway service on May 25, 1918, as a stenographer of the L. & N., at Louisville and in 1926 he was transferred to the office of the general manager, with the same headquarters. On June 1, 1937, he was promoted to assistant to the superintendent of safety at Louisville, and one year later he was advanced to assistant trainmaster, with headquarters at Loyall, Ky., later being transferred to Latonia, Ky. On April 1, 1943, Mr. Kirchner was promoted to assistant division superintendent at Pensacola, Fla., and on March 10, 1944, he was transferred to Knoxville, remaining in that position until his new appointment.

Frederick W. Kirchner

H. P. Hannan, superintendent freight transportation of the Chicago River & Indiana and the Indiana Harbor Belt, with headquarters at Gibson, Ind., has been appointed superintendent freight transportation of the New York Central, with headquarters at Cleveland, Ohio. **R. P. Gribben,** superintendent freight transportation there, retired on May 31, after more than 48 years of service.

F. Sparks, trainmaster of the Missouri Pacific at Jefferson City, Mo., has been transferred to Council Grove, Kan., succeeding **W. A. Learmont,** who has been assigned to other duties. **E. M. Bishop,** trainmaster at Bush, Ill., has been transferred to the St. Louis, Glencoe and Bagnell subdivisions, replacing **F. E. Fletcher,** who in turn has been transferred to Jefferson City, relieving Mr. Sparks. **G. M. Helmig** has been appointed trainmaster, with headquarters at Little Rock, Ark.,

succeeding **Howard Jones,** who has been transferred to Bush, replacing Mr. Bishop.

Fendall E. Carpenter, whose promotion to division superintendent of the Nashville, Chattanooga & St. Louis, with headquarters at Nashville, Tenn., was reported in the *Railway Age* of May 25, was born at Somerville, Tenn., on April 18, 1885. He entered railway employment on January 18, 1904, in yard service on the N. C. & St. L., at Memphis, Tenn., later serving in the station agency at the same point. In 1913 he was promoted to chief clerk in the division superintendent's office at Paducah, Ky., and from 1920 to 1928 he was trainmaster on the Paducah and Memphis division, with the same headquarters. In 1939 Mr. Carpenter was advanced to assistant director of personnel, with headquarters at Nashville, and one year later he became trainmaster of the Chattanooga division. In 1943 he was promoted to assistant division superintendent, with headquarters at Memphis, the position he held at the time of his new appointment.

Clarence L. Burpee, whose appointment as general supervisor of terminals of the Atlantic Coast Line, with headquarters at Florence, S. C., was announced in the May 25 issue of *Railway Age,* was born at Jackson, Ga., on September 12, 1894, and entered railway service in 1911 as a yard clerk for the Atlantic Coast Line. He served successively as switchman, yard conductor, yardmaster, general yardmaster, and terminal yardmaster, becoming superintendent of terminals at Jacksonville, Fla., in 1929, which post he maintained until July, 1942, when he began military service in World War II. Experienced as a member of the American Expeditionary Forces, Marine Corps, during World War I, Mr. Burpee was first assigned as colonel in command of the 703rd Railway Grand Division, which participated in the invasion of North Africa, after which he was placed in charge of the French Morocco railroads. In the fall of 1943, he was assigned to the Fifth Army (Transportation Section) for

Clarence L. Burpee

the invasion of Italy, later being appointed director of the Italian State railroads. As brigadier general in command of the Military Railway Service during the invasion of France, he was in charge of the initial organization of U. S. Army railroad lines and directed subsequent railway operations of the invading forces. Mr. Burpee's return to the A. C. L. in his new post became effective on May 1.

H. H. Sparling, whose promotion to assistant general manager of the Winnipeg region of the Canadian National was reported in the *Railway Age* of May 25, was born on November 18, 1883, and entered railroad service in September, 1901, as telegraph operator on the Grand Trunk Western. He joined the Canadian Pacific as an operator in August, 1906, and then returned to the Grand Trunk in the same capacity the following January. He served as dispatcher for the Grand Trunk Pacific (now the Canadian National) at Ft. William, Ont., and Sioux Lookout, from July, 1911, to June, 1924, when he became chief dispatcher of the Canadian National. From 1929 to 1937 he occupied various supervisory positions at Winnipeg, Man., and was appointed superintendent of transportation at Edmonton, Alta., in April, 1937. Two years later he was named superintendent of the Edmonton division, and in May, 1942, he was advanced to general superintendent of the Saskatchewan dis-

H. H. Sparling

trict. He was later transferred to Edmonton as general superintendent of the Alberta district, and remained in that post until November, 1944, when he was promoted to chief of transportation, with headquarters at Montreal, Que., the position he held at the time of his new appointment.

L. K. Sorensen, general assistant to the vice-president of the Chicago, Milwaukee, St. Paul & Pacific at Chicago, has been promoted to general manager, Lines West, with headquarters at Seattle, Wash., succeeding **L. F. Donald,** who has been transferred as general manager, Lines East, with headquarters at Chicago, replacing **O. N. Harsted,** whose election as vice-president, operations, is reported elsewhere in this issue. **H. C. Munson,** general superintendent of the middle district at Milwaukee, Wis., has been advanced to assistant general superintendent, eastern lines, with headquarters at Chicago. He is succeeded by **W. J. Whalen,** who was previously superintendent of the La Crosse and River division, with headquarters at La Crosse, Wis. **J. D. Shea,** trainmaster at Chicago, has been promoted to assistant superintendent of the Iowa and Dakota division, with headquarters at Sioux City, Iowa, replacing **J. T. Hansen,** who has been advanced to superintendent of the Trans-Missouri division, with headquarters at Miles City, Mont., where he replaces **M. P. Ayars,** who in turn has been transferred to La Crosse, relieving Mr. Whalen.

Edward F. Stock, traffic manager of the Peoria & Pekin Union, at Peoria, Ill., has been promoted to general traffic manager, with the same headquarters. Mr. Stock was born at Peoria on October 28, 1883, and received his higher education at the Bradley Polytechnic Institute in that city. He entered railway service on August 15, 1903, as a clerk on the Toledo, Peoria & Western, serving in various capacities until 1912, when he was advanced to chief clerk to the general freight agent, with headquarters at Peoria. During the period between 1918 and 1920, Mr. Stock served as chief clerk to the general freight and passenger agent while the road was under jurisdiction of the U. S. Railroad Administration. On March 1 of the latter year he was appointed general freight and passenger agent of the Peoria & Pekin Union, and on March 15, 1927, he was promoted to the position he held at the time of his new appointment.

TRAFFIC

John J. O'Connor, general agent of the Northern Pacific, has been promoted to assistant general freight agent, with headquarters as before at St. Paul, Minn.

Robert L. Peace, division freight agent of the Southern at St. Louis, Mo., has been promoted to division freight and passenger agent, with the same headquarters.

Clarence C. Thompson, whose promotion to passenger traffic manager of the Atchison, Topeka & Santa Fe, with headquarters at Los Angeles, Cal., was reported in the *Railway Age* of May 4, was born at Chicago on July 14, 1887. He entered railway service in March, 1904, with the

Clarence C. Thompson

Chicago, Indianapolis & Louisville as a clerk at Chicago, and five years later he went with the Chicago & Western Indiana, holding various minor positions until July 14, 1914, when he became a ticket seller on the Santa Fe, with the same headquarters. In July, 1917, Mr. Thompson was advanced to assistant city ticket agent, and

in January, 1921, to city passenger agent, also at Chicago. In June, 1936, he was promoted to division passenger agent, and three years later he became general passenger agent, with headquarters at Los Angeles, the position he held at the time of his new promotion.

James R. Brockman, traveling freight and passenger agent for the Southern, has been named district freight and passenger agent, with headquarters as before at Spartanburg, S. C.

George L. Bryson, whose promotion to passenger traffic manager of the Grand Trunk Western, with headquarters at Chicago, was reported in the *Railway Age* of May 4, was born at Chicago and entered the service of the Grand Trunk Western in May, 1912, as ticket stock clerk at Chicago. After subsequent service in Detroit, Mich., he was appointed traveling passenger agent at Kansas City, Mo., and after service in World War I he returned to the railroad as city passenger agent at Chicago. He subsequently served as traveling passenger agent at Chicago and Cincinnati, Ohio. Mr. Bryson was appointed city passenger agent at Philadelphia, Pa., in 1922 and in

George L. Bryson

June, 1927, he was promoted to district passenger agent at Washington, D. C. In March, 1940, he was appointed general agent at New York, and in June, 1942, he was promoted to general eastern passenger agent, with the same headquarters, the position he held at the time of his new appointment.

F. E. Richter has been appointed general agent for the Missouri Pacific, with headquarters at Washington, D. C., succeeding **J. A. MacDonald,** deceased, and the position of assistant general agent has been abolished.

D. R. Miller has been appointed general agent of the Missouri-Kansas-Texas, with headquarters at Portland, Ore., succeeding **C. E. Turner,** who has been transferred to Seattle, Wash., where he relieves **C. Woodring,** who has resigned.

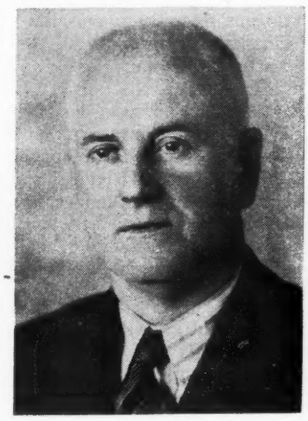
George R. Gregg, assistant general freight agent of the Chicago Great Western at Chicago, has been promoted to general traffic manager, with the same headquarters. **Thomas G. Kees,** assistant to the vice-president, traffic, has been promoted to freight traffic manager, sales and service. **R. G. Hawkinson,** freight traffic manager, has been appointed freight traffic manager, rates and divisions.

Alton J. Ferrell, whose promotion to foreign freight traffic manager of the Chicago, Rock Island & Pacific, with headquarters at Chicago, was reported in the *Railway Age* of May 25, was born at

Alton J. Ferrell

Humble, Tex. He entered railway service on September 1, 1923, with the Texas & New Orleans (part of the Southern Pacific) and on April 1, 1937, he went with the Rock Island as city freight agent, with headquarters at Houston, Tex. On July 1, 1943, Mr. Ferrell was advanced to foreign freight agent, with the same headquarters, the position he held at the time of his new appointment.

J. M. Macrae, whose promotion to freight traffic manager, Western Region, of the Canadian National, with headquarters at Winnipeg, Man., was reported in the *Railway Age* of May 25, was born in Scotland. He entered railway service in 1906 in the audit department of the Canadian Northern at Winnipeg, and shortly after resigned to go with an oil company as traffic manager. He returned to the



J. M. Macrae

Canadian Northern in 1912 as district freight agent, with headquarters at Saskatoon, Sask., and upon the formation of the Canadian National in 1919 he was promoted to assistant general freight agent at Winnipeg. Mr. Macrae served consecutively as general freight agent, with headquarters at Vancouver, B. C., and as assistant freight traffic manager of the western region at Winnipeg, and in 1942 he was advanced to assistant freight traffic manager, system, with headquarters at Montreal, Que., the position he held at the time of his new appointment.

L. A. Ebert, general agent of the Illinois Terminal at Springfield, Ill., has been transferred to Minneapolis, Minn., succeeding **K. E. Snow,** who has been transferred to Danville, Ill., where he replaces **J. J. Flynn,** who in turn goes to Springfield, relieving Mr. Ebert.

J. W. Tumlin, who has been on leave of absence from the Virginian since January, 1943, in the United States Army, has now resumed service as general agent at Atlanta, Ga., succeeding **C. L. Outen,** transferred to Charleston, W. Va., to succeed **J. F. Buskey,** who has been placed on the inactive list due to illness.

Frank D. Tracy, assistant general agent of the Kansas City Southern, has been promoted to general agent, with headquarters as before at Milwaukee, Wis., succeeding **Henry Brown,** who has retired after 40 years of service. **I. H. Goodwin,** traveling freight agent, with headquarters at Shreveport, La., has been advanced to general agent at San Antonio, Tex.

J. B. Williams, general agent of the Denver & Rio Grande Western at Boston, Mass., has been promoted to assistant traffic manager, with headquarters at Chicago, succeeding **G. W. Wahlberg,** who has resigned. **J. W. Westlake,** perishable freight agent at New York, has been advanced to general agent at Boston, succeeding Mr. Williams.

Jack H. Butridge, district service agent of the Illinois Central at Springfield, Ill., has been promoted to general agent, with headquarters at Indianapolis, Ind., succeeding in part to the duties of **Paul J. Naugle,** who has been serving as general agent at both Indianapolis and Cincinnati, Ohio, but will hereafter devote full time to the latter territory.

V. G. Wright, division freight agent of the Chicago, Burlington & Quincy at Burlington, Iowa, has been promoted to assistant general freight agent, with headquarters at Denver, Colo. **G. T. Lynch,** commercial agent at St. Paul, Minn., has been advanced to division freight agent at Burlington, relieving Mr. Wright. **Lynn T. Swanson** has been appointed general agent, fuel traffic department, with headquarters at Chicago.

Eugene Mock, general freight traffic manager of the Missouri Pacific Lines, at St. Louis, Mo., has been advanced to chief traffic officer, with the same headquarters, succeeding **H. M. Johnson,** whose promotion to executive assistant is reported elsewhere in this issue. **J. R. Staley,** freight traffic manager, has been promoted to general freight traffic manager, relieving Mr. Mock, and **M. P. Eckman,** assistant freight traffic manager at St. Louis, has been advanced to freight traffic manager, with the same headquarters, replacing Mr. Staley. A photograph and sketch of Mr.

Eckman appeared in the *Railway Age* of May 25 at the time of his appointment as assistant freight traffic manager.

Harry Arkle, division freight agent of the Canadian Pacific, at Winnipeg, Man., has been promoted to general freight agent, with the same headquarters, succeeding **R. G. Holmes,** who has retired after 48 years of service. **J. N. McPherson,** district freight agent at Vancouver, has been advanced to division freight agent, with the same headquarters, replacing **A. M. Shields,** who has been transferred to Winnipeg, relieving Mr. Arkle. **J. I. Peters,** district freight agent at Nelson, B. C., has been promoted to division freight agent, with headquarters at Vancouver, and **W. G. Henderson,** traveling freight agent, with headquarters at Vancouver, has been advanced to district freight agent at Vernon, B. C., replacing **K. D. Carmichael,** who in turn has been transferred to Nelson, succeeding Mr. Peters.

M. L. Craig, general agent of the Texas & Pacific, at Dallas, Tex., has been promoted to assistant general freight agent, with the same headquarters. **C. R. Rasmus** has been appointed general agent, with headquarters at St. Louis, Mo., succeeding **C. A. Johnston,** who has been transferred to Dallas, Tex., relieving Mr. Craig. **J. R. Dalby,** general agent at El Paso, Tex., has been advanced to assistant general passenger agent, with the same headquarters, and **T. P. Fagan** has been appointed general agent, with headquarters at El Paso, replacing Mr. Dalby. **W. L. McMurry,** general agent at Ft. Worth, Tex., has been promoted to assistant general freight agent, with headquarters at El Paso. **H. D. Riddells** has been appointed general agent at Detroit, Mich., relieving **G. D. Tatum,** who has been transferred to Ft. Worth, succeeding Mr. McMurry. **C. E. McKnight** has been appointed general agent, with headquarters at Texarkana, Tex., replacing **H. B. Smith,** who has been transferred to Tulsa, Okla. **William R. Hill** has been appointed district passenger agent at St. Louis, and **W. G. Harris** has been appointed assistant general passenger agent at Dallas.

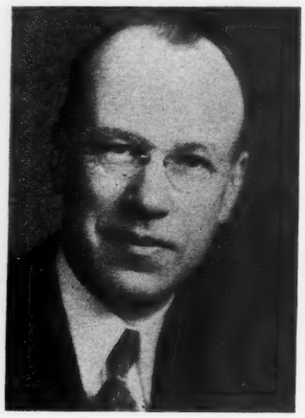
G. F. Hardy, western traffic manager of the Great Northern at Seattle, Wash., has been promoted to general freight traffic manager, with headquarters at St. Paul, Minn., succeeding to the duties of **P. H. Burnham,** who has retired. **R. P. Starr,** general freight agent, has been advanced to western traffic manager, with headquarters as before at Seattle, replacing Mr. Hardy. **R. L. Wyatt,** general agent at St. Louis, Mo., has been promoted to assistant general freight agent, with headquarters at Spokane, Wash., relieving **M. H. Greenleaf,** who in turn has been advanced to general freight agent at Seattle, succeeding Mr. Starr. **E. W. Bergstrom,** assistant general freight agent at St. Paul, has been promoted to general freight agent, with the same headquarters, replacing **R. P. Reed,** who becomes general freight agent, with headquarters at St. Paul, and **A. L. Strom,** chief clerk to the assistant general freight and passenger agent at Helena, Mont., has been promoted to assistant to the western traffic manager, with headquarters at Seattle, relieving **A. C. Berg,** whose promotion to assistant to the vice-president, traffic, at St. Paul, is reported elsewhere in this issue. He relieves **F. P. McCarty,** who has been advanced to assistant general freight agent at St. Paul.

ENGINEERING & SIGNALING

C. R. Shaw has been appointed division engineer on the Southern Pacific, with headquarters at Lafayette, La., succeeding **J. A. Gorr,** who has retired.

S. H. Shepley has been appointed division engineer of the Elgin, Joliet & Eastern, with headquarters at Gary, Ind., succeeding **P. F. Maisenbacher,** deceased.

Erving N. Fox, whose promotion to engineer of signals and telegraph of the Boston & Maine, with headquarters at Boston, Mass., was reported in the *Railway Age* of June 1, was born on March 20, 1892, at Malden, Mass., and was graduated from Tufts college in 1915, with a degree in electrical engineering. He entered railway service on June 5, 1910, with the Boston & Maine, being employed in the operating department as assistant station agent during his high school and college years,



Erving N. Fox

and as telegraph operator and towerman during vacation periods. He entered the signal department on January 8, 1916, serving as draftsman. In November, 1917, he was promoted to circuit designer; in March, 1919, to signal inspector; in October, 1920, to assistant signal supervisor; in May, 1922, to general signal inspector; in April, 1931, to office engineer-signals; and in December, 1943, to assistant engineer-signals, which position he held until his recent promotion to engineer of signals and telegraph.

Joseph P. Muller, whose retirement as engineer of signals and telegraph of the Boston & Maine, with headquarters at Boston, Mass., was reported in the *Railway Age* of June 1, has been connected with the Boston & Maine since 1930, when he resigned from the position of chief signal and electrical inspector on the Southern to become signal construction engineer on the Boston & Maine. In 1931 he was appointed assistant signal engineer, the position of signal construction engineer being abolished. Later in the same year, Mr. Muller was promoted to signal engineer, and in April, 1936, he was promoted to engineer of signals and telegraph, which position he has held until his retirement.

R. B. Rhode, assistant engineer, bridge department, of the Northern Pacific, has been promoted to division engineer, with headquarters at Missoula, Mont., succeeding **S. A. Erickson,** who has retired.

A. B. Chaney, who has been on leave of absence to serve on a special railway mission in the Republic of Ecuador, has returned to the Missouri Pacific as district engineer, with headquarters at Little Rock, Ark., succeeding **G. M. Helmig,** who has been appointed trainmaster, with the same headquarters.

E. S. Taylor, signal engineer, eastern lines, of the Canadian Pacific, at Toronto, Ont., has been appointed engineer of signals, system, with headquarters at Montreal, Que., a newly-created position. **A. J. Kidd,** assistant signal engineer, has been promoted to signal engineer, eastern lines, with headquarters as before at Toronto, succeeding Mr. Taylor. **R. I. Becksted,** signal supervisor at Toronto, succeeds Mr. Kidd as assistant signal engineer, with the same headquarters. **P. C. Cameron,** signal foreman, succeeds Mr. Becksted as signal supervisor at Toronto.

D. L. Howard, assistant manager, communications, western lines, of the Canadian Pacific, at Winnipeg, Man., has been appointed assistant general manager, communications, with headquarters at Montreal, Que., succeeding **W. M. Thompson,** who has retired. **G. H. Pescud,** superintendent of communications for the Saskatchewan district, at Moose Jaw, Sask., succeeds Mr. Howard at Winnipeg under the new title of general superintendent of communications, western lines. **P. G. McLean,** assistant manager, communications, eastern lines, at Montreal, becomes general superintendent of communications, eastern lines, a change of title. **R. V. Tombe,** inspector at Vancouver, B. C., has been promoted to superintendent of communications at Moose Jaw, succeeding Mr. Pescud.

MECHANICAL

Clarence A. Sheeler, master mechanic for the Canadian Pacific, Ontario district, with headquarters at Toronto, Ont., has retired after 43 years of service.

W. E. Corr, superintendent of the Seaboard Air Line's car department at Norfolk, Va., since 1930, has retired after 34 years of service, because of ill health.

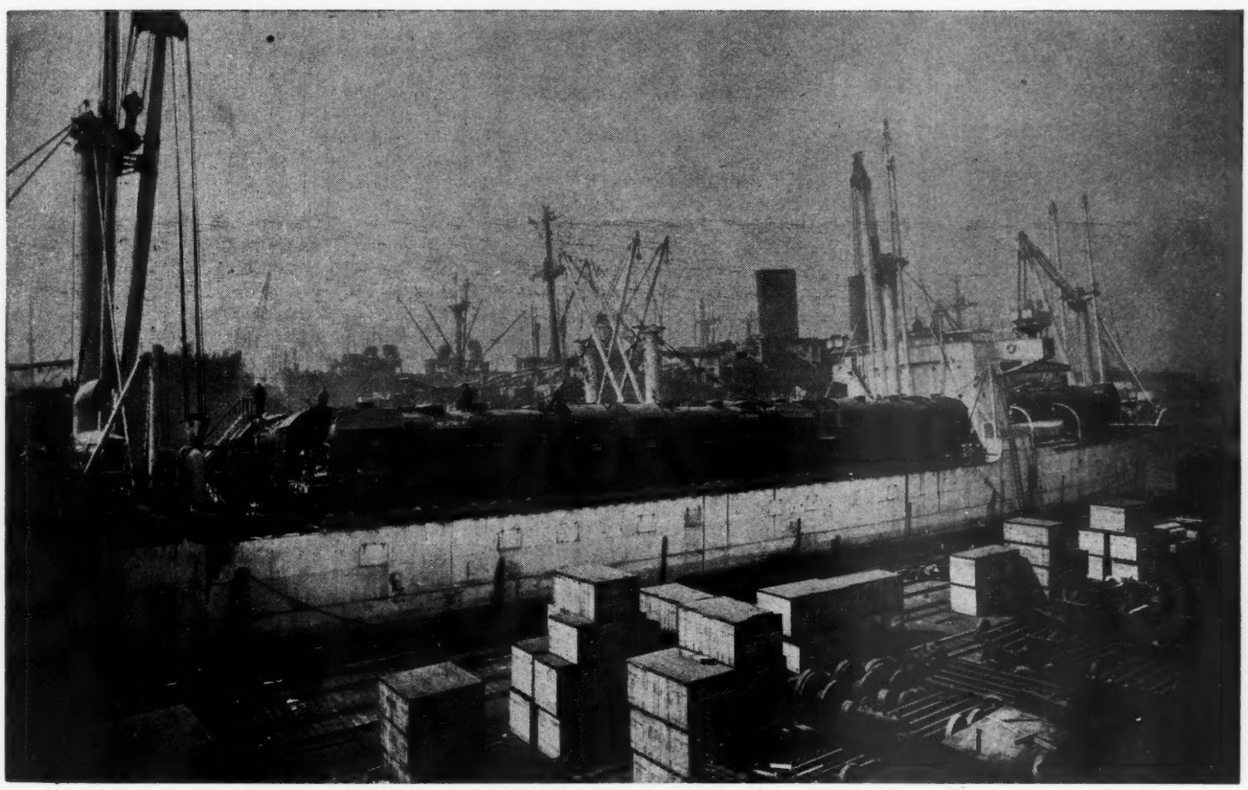
L. H. Sultan, recently released from the armed forces and former dynamometer car operator, has returned to the Southern Pacific as electrical engineer, motive power department, with headquarters at San Francisco, Cal., succeeding **Clarence L. Abrams,** who has retired after nearly 41 years of railroad service.

J. O. Green, master mechanic of the Gulf, Mobile & Ohio, at Mobile, Ala., has been promoted to superintendent of motive power and car equipment, with the same headquarters.

News Department continued on next left-hand page

THE WORLD RELIES . . .

on Steam Motive Power



The world's major transportation requirements are borne by steam motive power. France, for example, in rehabilitating her war-ruined railroads, is securing from the United States steam locomotives built expressly to meet her particular needs.

Lima began last summer to make deliveries on an order for one hundred eighty of such locomotives. Here is another of the shiploads of locomotives that recently left for France, and additional orders for one hundred similar locomotives for France have since been received.

LIMA LOCOMOTIVE WORKS LIMA LOCOMOTIVE WORKS INCORPORATED INCORPORATED, LIMA, OHIO

James W. Hughes, electrical engineer, Eastern lines, of the Canadian Pacific, with headquarters at Toronto, Ont., has been appointed general electrical engineer at Montreal, Que., succeeding **John A. Shaw,** who has retired after 31 years in that post.

Mr. Hughes was born at Chatham Center, N. Y., on September 28, 1886, and entered railroading with the Canadian Pacific in 1907 as an assistant electrical engineer at the Angus shops. He became electrical engineer, Eastern lines, in 1916, and in that capacity directed the installation of modern electrical equipment on the C. P. R.'s bascule bridge at Sault Ste. Marie.

Mr. Shaw was born in 1876 at Montreal and was graduated from McGill university, entering railroading with the Canadian Pacific as an assistant electrical engineer at the Angus shops in 1904. He became electrical engineer, Eastern lines, in 1909, and advanced in 1915 to the post from which he now has retired. During his 42 years' service, he supervised the Royal York

James W. Hughes

hotel installations and the design and erection of the million dollar heating plant for the Toronto terminals, which includes Union station.

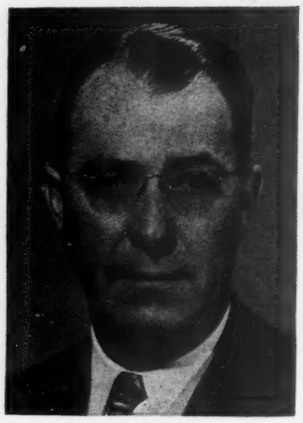
SPECIAL

Steve Canton, rail publicity representative for the Railway Express Agency, with headquarters at New York, has been named air express publicity representative.

R. W. Schultz has been appointed supervisor of safety of the Minneapolis, St. Paul & Sault Ste. Marie, with headquarters at Minneapolis, Minn., succeeding **F. R. Clapp,** whose recent death was reported in the *Railway Age* of June 1.

Major General C. P. Fenwick, of Toronto, Ont., who was director general of medical services for the Canadian Army during World War II, has been named chief of medical services for the Canadian Pacific, with headquarters at Montreal, Que., succeeding **Dr. H. A. Beatty,** who has retired after 44 years of service.

Ralph F. Berndt, whose promotion to general manager of the Rio Grande Motor Way, Inc., (a subsidiary of the Denver & Rio Grande Western) with headquarters at Denver, Colo., was reported in the *Railway Age* of May 1, was born at Denver on July 19, 1906, and is a graduate of the University of Denver. He began his business career with the Rocky Mountain Motor Company in 1928, being promoted to superintendent in 1933. He subsequently



Ralph F. Berndt

served with the Denver, Colorado Springs & Pueblo Motor Way and the Denver, Salt Lake & Pacific Motor Way, being advanced to assistant general manager of these two organizations in 1941. In the same year Mr. Berndt was appointed assistant to the general manager of the Rio Grande Motor Way, Inc., with headquarters at Denver, and in 1943 he was promoted to assistant general manager, with the same headquarters, the position he held at the time of his new appointment.

PURCHASES AND STORES

E. E. Hanson, whose appointment as general purchasing agent for the Southern, with headquarters at Washington, D. C., was announced in the *Railway Age* of May 25, was born at Evanston, Ill., on July 23, 1884, and entered railway service with the Southern as a clerk at Washington in 1901.

E. E. Hanson

After serving in various clerical and secretarial positions, he was promoted to chief clerk to the superintendent of motive power at Macon, Ga. In March, 1913, he was advanced to purchasing agent of the Georgia Southern & Florida (a Southern system line), then to assistant purchasing agent of the Southern at Macon in 1920. Mr. Hanson went to Washington as assistant general purchasing agent in 1927, and maintained this post until his advancement on June 1.

A. S. Galey, assistant to general storekeeper for the Canadian Pacific, with headquarters at Montreal, Que., has been appointed general storekeeper there, with jurisdiction over the eastern lines, succeeding **A. S. Macdonald,** who has retired.

OBITUARY

Emerson E. Ramey, superintendent of fuel conservation of the Baltimore & Ohio at Baltimore, Md., died on June 2 following a long illness. He was 64 years old.

Charles E. Baxter, superintendent of telegraph on the New York Central, at Detroit, Mich., died at his home in that city on May 22.

T. A. Burtis, general agent of the Chesapeake & Ohio and the Pere Marquette, with headquarters at Pittsburgh, Pa., died on May 24, at the age of 60, after 34 years of service.

Dr. Francis D. Patterson, special medical consultant of the Pennsylvania, with headquarters at Philadelphia, Pa., died at his home in Overbrook, Pa., on June 2. Aged 70, Dr. Patterson had been in medical railway service for the Pennsylvania since 1921, and from 1929 to 1945 was the road's chief medical adviser.

Frank C. Wright, vice-president of the Bangor & Aroostook, with headquarters at New York, died at Tarrytown, N. Y., on May 29. Mr. Wright was born at Owings Mills, Md., on July 13, 1871, and attended Baltimore City college, then entered railroading in 1886 as assistant agent for the Norfolk & Western at New River, Va. He was subsequently advanced to agent, then cashier, and in 1894 became union ticket agent at Bristol, Va.-Tenn., for the East Tennessee, Virginia & Georgia (now the Southern), as well as the Norfolk & Western. Later that year he was named agent and yardmaster for the Southern at Bristol, and in 1895 became chief clerk to assistant general passenger agent at Chattanooga, Tenn. He then went with the Florida Central & Peninsular (now Seaboard) in 1898 as district passenger agent at Jacksonville, Fla. In 1900, Mr. Wright went to New York as traffic manager for Rogers Brown & Co., and in 1901 joined the Chicago Short Line as general manager, later advancing to president, in which post he served until 1912. From 1911 until 1914, he was president of the Washington & Old Dominion at Washington, D. C., during which time he served on a Senate committee on naval affairs, railroad and coal investigation. Mr. Wright then held a series of executive and advisory positions with the Bangor & Aroostook, the United States Railroad Administration, and Lee Higginson & Co., New York, and other corporations. He had, at the time of his death, been vice-president of the Bangor & Aroostook since 1920 and special assistant to the board of directors of the Reconstruction Finance Corporation since 1936.

Table of Revenues and Expenses begins on the next left-hand page.

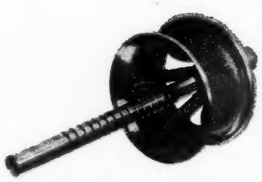
Give EXISTING LOCOMOTIVES THE POWER

...for today's needs

Thousands of locomotives now in service were built at a time when modern high speed operation with heavy trains was not contemplated. But today high speed is essential both in passenger and freight service.

Fortunately, many of the older locomotives can be adapted to meet the changed conditions by the installation of The Franklin System of Steam Distribution.

Conversion, using The Franklin System, is the most practical and economical method of quickly providing the increased horsepower required to haul heavy trains at high speeds.



FRANKLIN RAILWAY SUPPLY COMPANY, INC.

NEW YORK • CHICAGO • MONTREAL

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF APRIL AND FOUR MONTHS OF CALENDAR YEAR 1946

Name of Road		Av. mileage operated during period	Operating revenues: Freight	Passenger	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures	Maintenance of Equipment	Traffic	Transportation	Total	Operating ratio	Net from railway operation	Railway tax accruals	Net railway operating income 1946	Net railway operating income 1945
Akron, Canton & Youngstown	April	171	$303,902	$81	$320,222	$58,027	$37,970	$24,320	$112,827	$253,894	79.3	$66,328	$24,375	$23,793	$63,808
	4 mos.	171	1,232,978	463	1,299,105	234,763	158,564	94,410	467,267	1,034,950	79.7	264,155	96,016	101,546	275,059
Alton	April	959	1,391,885	595,692	2,319,294	561,675	514,967	81,218	1,074,381	2,383,359	102.8	—64,065	180,208	—378,138	530,200
	4 mos.	959	5,675,528	3,001,233	9,978,879	2,056,811	2,140,909	344,331	4,334,505	9,488,113	95.1	490,766	737,021	—768,323	1,865,872
Atchison, Topeka & Santa Fe	April	13,085	22,809,007	6,545,029	32,236,426	4,832,399	6,708,746	726,143	11,635,676	34,638,452	76.4	7,597,974	4,827,361	3,083,806	4,202,527
	4 mos.	13,085	91,328,892	31,088,732	132,812,108	18,763,292	26,134,285	2,839,872	47,875,233	98,060,750	74.3	34,151,358	18,565,790	16,161,924	18,643,860
Atlanta & West Point	April	93	217,478	63,183	316,273	47,834	64,115	12,101	164,639	309,059	97.7	7,214	*14,430	—173	—27,864
	4 mos.	93	783,220	338,285	1,272,188	187,397	226,671	49,473	654,468	1,200,994	94.4	71,194	*34,866	21,597	119,977
Western of Alabama	April	133	220,755	64,329	312,787	44,069	72,628	11,842	138,080	285,642	91.3	27,144	*2,329	32,254	37,320
	4 mos.	133	809,676	361,031	1,291,260	229,182	254,345	47,813	570,703	1,179,717	91.4	111,542	8,396	105,404	155,790
Atlantic Coast Line	April	5,569	8,434,702	2,614,729	11,813,622	2,812,920	1,888,200	244,634	4,881,071	10,368,591	87.8	1,445,031	800,000	245,024	763,747
	4 mos.	5,569	31,311,755	11,402,423	45,840,853	10,868,939	7,892,544	1,028,392	18,608,123	40,408,762	88.2	5,432,091	3,400,000	606,736	4,053,817
Charleston & Western Carolina	April	343	272,464	8,187	288,498	70,259	63,385	12,548	127,006	281,426	97.5	7,072	20,000	—18,771	40,223
	4 mos.	343	1,131,651	29,003	1,194,282	316,166	285,652	47,136	514,137	1,192,691	99.9	1,591	85,000	—93,720	193,520
Baltimore & Ohio	April	6,139	14,855,861	3,045,863	19,302,153	3,949,206	5,871,566	588,419	9,523,521	21,122,755	109.4	—1,820,602	1,527,856	—3,669,913	4,021,462
	4 mos.	6,139	74,016,847	14,113,682	93,776,939	15,245,839	24,923,316	2,339,265	43,552,528	91,075,675	97.1	2,701,264	6,456,234	—5,227,572	14,892,098
Staten Island Rapid Transit	April	29	147,050	118,850	278,539	53,092	44,188	1,948	147,967	271,398	97.4	7,141	35,902	—45,679	103,787
	4 mos.	29	598,527	449,387	1,094,409	213,824	157,982	6,517	596,996	1,068,806	97.7	25,603	145,072	—192,252	318,258
Bangor & Aroostook	April	602	928,099	55,884	1,012,665	232,909	190,433	6,236	291,228	761,564	75.2	251,101	76,693	151,517	149,884
	4 mos.	602	4,510,364	229,084	4,847,642	935,620	820,799	26,110	1,411,622	3,352,812	69.2	1,494,830	596,494	781,128	598,281
Bessemer & Lake Erie	April	214	426,900	1,878	439,406	167,946	431,928	16,650	320,029	983,103	223.7	—543,697	67,646	—463,989	515,718
	4 mos.	214	2,187,439	7,388	2,239,208	550,332	1,612,441	58,647	1,086,378	3,490,764	155.9	—1,251,556	210,144	—396,985	428,638
Boston & Maine	April	1,764	4,428,040	1,267,291	6,213,658	1,042,019	1,091,442	93,498	2,745,331	5,254,191	84.6	959,467	490,804	153,839	906,368
	4 mos.	1,764	17,690,336	5,598,065	25,430,569	4,270,952	4,387,084	403,660	11,517,492	21,708,274	85.4	3,722,295	1,923,907	564,207	2,444,409
Burlington, Rock Island	April	228	165,368	65,754	249,429	37,921	24,759	4,141	95,471	179,054	71.8	70,375	10,190	25,954	71,439
	4 mos.	228	705,557	256,355	1,039,801	155,103	116,117	15,409	386,426	740,008	71.2	299,793	36,726	100,159	178,752
Cambria & Indiana	April	35	2,290	.....	2,346	13,123	48,811	654	9,809	80,608	3435.9	—78,262	*3,035	—19,865	48,981
	4 mos.	35	443,213	.....	443,435	46,162	195,191	2,735	76,651	350,940	79.1	92,495	199,047	223,812	198,510
Canadian Pacific Lines in Maine	April	234	448,404	83,810	566,187	60,556	78,953	8,588	211,712	372,346	65.8	193,841	22,960	83,518	298,801
	4 mos.	234	1,923,968	294,712	2,345,103	240,831	344,147	33,503	921,096	1,588,595	67.7	756,508	94,695	301,163	649,698
Canadian Pacific Lines in Vermont	April	90	98,220	14,665	131,346	42,962	32,341	3,100	116,248	200,128	152.4	—68,782	9,816	—121,078	—68,251
	4 mos.	90	369,345	71,938	514,115	154,899	138,064	12,175	510,786	837,632	162.9	—323,517	43,229	—528,885	—454,999
Central of Georgia	April	1,815	2,092,324	388,302	2,735,706	489,922	497,551	94,680	1,298,736	2,538,261	92.8	197,445	203,193	—325	371,210
	4 mos.	1,815	7,994,900	1,925,653	10,999,747	1,940,043	2,006,187	356,923	5,283,501	10,219,945	92.9	779,802	777,221	49,670	1,792,644
Central New Jersey	April	649	3,037,849	534,000	3,795,204	513,876	814,576	64,810	1,918,265	3,491,628	92.0	303,576	373,827	—255,083	832,833
	4 mos.	649	12,373,385	2,190,502	15,606,440	1,974,992	3,213,429	258,304	7,989,292	14,169,743	90.8	1,436,697	1,579,094	—790,025	2,267,310
Central Vermont	April	422	472,334	62,000	585,347	109,899	119,133	10,761	354,010	630,185	107.7	—44,838	42,313	—146,266	—90,271
	4 mos.	422	2,017,740	297,000	2,515,006	432,277	510,644	41,176	1,411,838	2,528,566	100.5	—13,560	175,265	—421,420	—47,874
Chesapeake & Ohio	April	3,084	5,581,259	1,216,371	7,304,261	1,807,554	2,421,781	306,171	3,951,389	9,198,643	125.9	—1,894,382	*165,513	—1,581,431	2,529,039
	4 mos.	3,084	49,938,281	5,697,845	57,703,204	8,955,797	11,211,044	1,209,808	20,047,897	43,943,776	76.2	13,759,428	7,839,302	8,097,238	10,696,404
Chicago & Eastern Illinois	April	910	1,232,419	353,980	1,813,763	327,038	493,027	82,494	940,480	1,975,370	108.9	—161,607	143,000	—435,208	242,007
	4 mos.	910	5,432,748	1,589,421	7,895,381	1,292,617	2,033,745	312,835	3,772,907	7,888,278	99.9	7,103	571,900	—1,029,317	999,164
Chicago & Illinois Midland	April	131	114,405	968	122,694	45,353	82,386	22,668	83,356	261,769	213.4	—139,075	*49,159	—81,981	81,574
	4 mos.	131	1,513,185	3,642	1,588,034	173,081	372,827	98,189	593,155	1,352,254	85.2	235,780	133,463	115,312	295,571
Chicago & North Western	April	8,065	8,120,369	2,758,893	12,359,213	2,234,127	2,658,437	262,712	5,502,471	11,266,729	91.2	1,092,484	877,692	64,242	2,259,448
	4 mos.	8,065	33,004,043	11,811,435	50,610,510	8,601,742	1,991,584	1,002,497	23,535,422	46,290,082	91.5	4,320,428	3,611,725	—434,048	7,056,836
Chicago, Burlington & Quincy	April	8,863	10,701,742	1,675,005	14,219,601	2,709,948	2,344,745	354,773	5,160,109	11,223,107	78.9	2,996,494	1,537,296	1,122,996	2,324,612
	4 mos.	8,863	49,974,980	11,116,838	67,869,813	9,324,608	9,327,426	1,335,034	23,114,553	45,650,485	67.3	22,219,328	9,848,312	10,856,540	11,327,086
Chicago Great Western	April	1,500	1,778,740	219,338	2,226,683	415,135	353,742	71,353	1,064,243	1,992,990	89.5	233,693	127,842	—59,374	243,112
	4 mos.	1,500	7,388,413	887,102	9,184,632	1,757,357	1,456,878	307,276	4,515,653	8,359,534	91.0	825,098	573,876	—569,713	960,587
Chicago, Indianapolis & Louisville	April	541	717,333	39,579	805,452	132,022	179,722	37,437	387,206	786,627	97.7	18,825	60,461	—116,026	158,534
	4 mos.	541	2,839,301	180,568	3,208,509	439,344	701,308	144,639	1,468,471	2,948,399	91.9	260,110	231,264	—245,807	862,425

* Credit.

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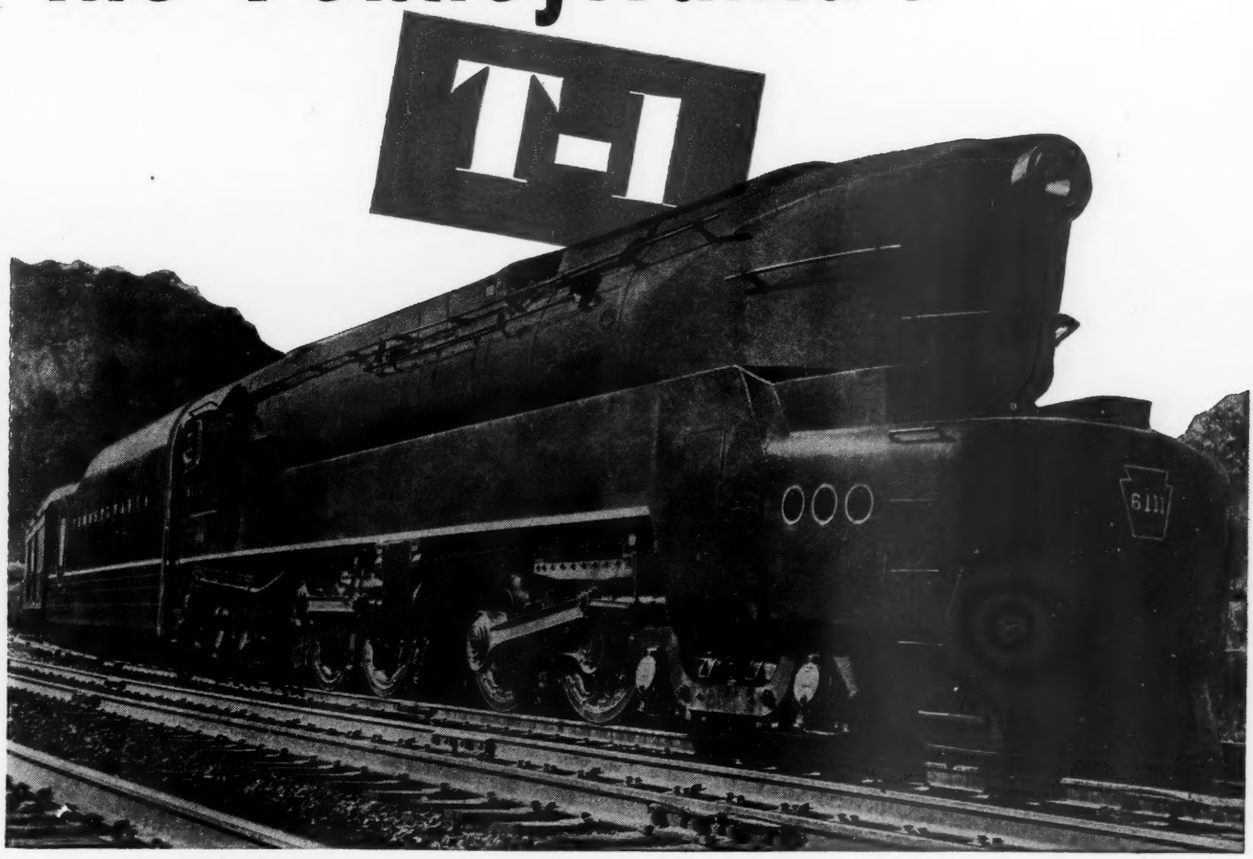

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AMERICAN ARCH COMPANY, INC.

NEW YORK • CHICAGO

SECURITY CIRCULATOR DIVISION

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF APRIL AND FOUR MONTHS OF CALENDAR YEAR 1946

Name of Road		Av. mileage operated during period	Operating revenues: Freight	Passenger	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures	Maintenance of Equipment	Traffic	Transportation	Total	Operating ratio	Net from railway operation	Railway tax accruals	Net railway operating income: 1946	1945
Chicago, Milwaukee, St. Paul & Pacific	April	10,733	$10,914,363	$2,252,638	$14,854,446	$2,977,832	$3,194,405	$316,146	$6,817,515	$14,124,498	95.1	$729,948	—$495,000	$840,860	$2,314,048
	4 mos.	10,733	47,212,094	10,514,956	64,412,097	9,966,989	12,693,080	1,279,371	29,994,624	57,196,478	88.8	7,215,619	22,000	5,212,250	9,838,753
Chicago, Rock Island & Pacific	April	7,652	8,423,536	2,345,868	11,847,410	1,663,103	2,151,698	387,019	4,794,450	9,658,676	81.5	2,188,734	697,842	818,294	1,785,291
	4 mos.	7,653	36,569,409	11,104,271	52,027,749	6,752,257	9,069,938	1,540,038	20,492,490	40,590,573	78.0	11,437,176	3,791,105	4,844,150	8,996,921
Chicago, St. Paul, Minneapolis & Omaha	April	1,616	1,660,615	222,734	2,110,370	452,623	418,170	46,587	1,058,597	2,072,436	98.2	37,934	160,891	—253,401	328,883
	4 mos.	1,616	6,709,783	1,057,359	8,606,063	1,538,313	1,615,664	190,983	4,704,875	8,427,920	97.9	178,143	650,111	—1,080,829	1,153,465
Clinchfield Railroad	April	302	735,964	8,617	755,299	125,616	169,799	25,551	209,644	555,684	73.6	199,615	145,327	84,522	413,557
	4 mos.	302	4,203,420	32,963	4,279,057	443,658	694,725	106,128	1,170,788	2,514,734	58.8	1,764,323	551,018	1,319,226	2,005,791
Colorado & Southern	April	748	579,634	132,508	801,205	180,385	177,356	21,878	355,963	786,776	98.2	14,429	56,195	—44,857	235,881
	4 mos.	748	2,302,164	760,133	3,429,210	690,584	696,051	83,012	1,503,620	3,174,667	92.6	254,543	276,486	—72,996	868,216
Fort Worth & Denver City	April	902	587,473	183,002	866,701	278,919	150,859	31,567	319,222	848,432	97.9	18,269	55,325	—50,943	217,009
	4 mos.	902	2,157,291	1,078,107	3,621,145	893,308	681,002	126,650	1,336,955	3,298,985	91.1	322,160	225,981	26,403	639,978
Colorado & Wyoming	April	42	55,722	.....	98,998	7,411	8,816	796	39,057	62,342	62.9	36,656	—46,524	82,054	20,906
	4 mos.	42	190,483	.....	332,663	31,010	53,654	3,217	138,797	250,006	75.1	82,657	—4,991	75,332	88,460
Columbus & Greenville	April	168	129,377	6,357	143,904	28,789	21,243	5,868	49,412	120,031	83.4	23,873	8,059	15,713	—2,469
	4 mos.	168	496,211	26,689	560,360	117,883	86,502	20,849	192,678	476,624	85.1	83,736	53,894	30,115	55,441
Delaware & Hudson	April	846	2,944,725	178,434	3,236,735	519,964	903,059	58,125	1,418,405	3,037,183	93.8	199,552	214,876	—22,365	525,317
	4 mos.	846	13,214,072	601,808	14,189,750	2,002,309	3,594,570	224,152	6,121,189	12,494,215	88.1	1,695,535	917,963	817,356	1,684,891
Delaware, Lackawanna & Western	April	973	4,206,058	878,818	5,609,024	649,719	976,082	126,571	2,898,613	4,863,870	86.7	745,154	417,498	278,320	832,385
	4 mos.	973	16,645,683	3,474,445	22,178,547	2,477,931	3,960,534	498,214	11,306,653	19,075,250	86.0	3,103,297	1,703,839	1,282,657	2,041,990
Denver & Rio Grande Western	April	2,386	2,760,662	623,449	3,617,237	558,106	989,623	126,797	1,484,074	3,394,934	93.9	222,303	275,246	—30,512	760,290
	4 mos.	2,386	12,054,769	3,629,591	16,619,828	1,946,660	4,078,298	462,211	6,853,340	14,231,378	85.6	2,388,450	1,210,162	1,083,909	4,162,709
Denver & Salt Lake	April	232	126,897	5,781	143,560	55,814	59,861	4,205	63,647	197,532	137.6	—53,972	31,815	—35,991	42,882
	4 mos.	232	985,081	31,577	1,061,665	211,643	240,359	15,302	439,203	959,572	90.4	102,093	131,041	141,323	288,402
Detroit & Mackinac	April	230	99,072	3,375	110,522	27,250	14,935	785	37,694	85,869	77.7	24,653	5,064	12,703	6,479
	4 mos.	230	352,598	14,953	395,147	78,757	63,369	3,137	149,273	315,380	79.8	79,767	18,858	33,175	8,743
Detroit & Toledo Shore Line	April	50	235,029	.....	236,275	38,012	27,982	10,217	103,388	189,317	80.1	46,958	6,003	—3,725	56,977
	4 mos.	50	1,377,674	.....	1,382,880	135,696	121,244	40,957	480,866	816,098	59.0	566,782	174,584	145,274	246,497
Detroit, Toledo & Ironton	April	464	699,493	1,066	737,622	113,777	160,005	17,805	226,294	547,685	74.3	189,937	46,516	104,851	162,690
	4 mos.	464	3,198,698	4,266	3,360,863	426,661	647,627	70,672	1,016,330	2,277,979	67.8	1,082,884	392,975	502,000	907,556
Duluth, Missabe & Iron Range	April	546	1,058,226	3,031	1,213,667	376,105	407,909	5,710	499,259	1,338,585	110.3	—124,918	91,760	—217,151	2,083,581
	4 mos.	546	1,503,438	16,076	1,745,500	1,279,273	1,515,662	24,665	1,412,676	4,423,264	253.4	—2,677,764	237,487	—2,922,307	—1,086,481
Duluth, Winnipeg & Pacific	April	175	178,000	1,600	184,300	48,830	30,374	2,656	80,343	167,167	90.7	17,133	13,978	—29,456	—14,740
	4 mos.	175	915,000	6,800	941,000	187,249	144,461	10,480	423,099	783,980	83.3	157,020	76,286	—59,959	—5,737
Elgin, Joliet & Eastern	April	392	1,447,320	26	1,982,167	288,196	410,854	19,703	918,788	1,706,580	86.1	275,587	155,697	66	397,122
	4 mos.	392	6,328,276	131	7,524,692	1,078,822	1,718,092	78,941	3,650,064	6,835,693	90.8	688,999	605,032	—350,695	1,784,276
Erie	April	2,242	8,227,851	856,512	9,662,516	1,125,897	2,056,194	269,849	4,772,732	8,785,972	90.9	876,544	587,849	—160,661	1,378,770
	4 mos.	2,242	33,316,195	3,412,737	39,330,528	3,950,514	7,925,752	1,011,356	19,420,010	34,525,286	87.8	4,805,242	2,923,558	47,286	4,980,242
Florida East Coast	April	682	1,800,508	708,258	2,723,197	358,277	358,105	52,041	924,560	1,843,372	67.7	879,825	230,006	488,778	408,592
	4 mos.	682	6,690,360	3,370,522	10,947,113	1,258,172	1,406,629	217,223	3,631,803	7,092,693	64.8	3,854,420	1,145,031	2,207,541	2,315,012
Georgia Railroad	April	328	534,095	86,321	662,496	86,145	131,067	25,708	297,483	567,587	85.7	94,909	37,677	62,736	128,141
	4 mos.	328	2,028,138	354,736	2,538,590	388,777	532,385	103,000	1,284,822	2,416,151	95.2	122,439	151,046	—8,119	653,431
Georgia & Florida	April	408	175,896	2,635	184,325	53,155	31,383	11,799	80,682	184,856	100.3	—531	12,332	—27,112	—10,096
	4 mos.	408	755,723	12,866	789,503	214,210	110,343	45,853	307,623	709,289	89.8	80,214	48,360	—22,665	26,715
Grand Trunk Western	April	1,026	2,193,000	237,000	2,622,000	539,727	570,030	45,263	1,384,781	2,660,306	101.5	—38,306	*205,237	65,007	324,712
	4 mos.	1,026	8,521,000	915,000	10,157,000	2,027,553	2,302,530	173,382	5,382,738	10,374,318	102.1	—217,318	363,196	—792,492	1,763,193
Canadian Nat'l Lines in New England	April	172	126,800	10,000	176,200	61,112	53,750	2,289	106,820	242,239	137.5	—66,039	21,716	—138,729	—31,387
	4 mos.	172	595,600	36,700	756,300	226,014	164,060	9,152	472,273	955,719	126.4	—199,419	86,864	—449,493	—366,303
Great Northern	April	8,322	8,973,812	1,294,699	11,270,505	2,854,459	2,523,031	298,326	4,116,014	10,342,931	91.8	927,574	1,239,566	—402,662	1,699,528
	4 mos.	8,322	37,913,136	6,163,852	47,997,141	10,144,839	10,540,125	1,050,030	19,131,066	42,898,195	89.4	5,098,946	4,656,104	73,952	5,709,455
Green Bay & Western	April	233	210,134	†58	215,850	64,367	22,880	11,453	84,089	193,554	89.6	22,296	22,635	—8,238	—2,647
	4 mos.	233	888,836	953	910,193	197,750	97,738	45,317	369,401	755,512	83.0	154,681	107,837	5,182	64,595

* Credit.
† Debtor.

Table continued on next left-hand page.

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AMERICAN THROTTLE COMPANY
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60 East 42nd Street, New York 17, N.Y.
122 S. Michigan Avenue, Chicago 3, Ill.

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF APRIL AND FOUR MONTHS OF CALENDAR YEAR 1946

Name of Road		Av. mileage operated during period	Operating revenues			Operating expenses					Operating ratio	Net from railway operation	Railway tax accruals	Net railway operating income	
						Maintenance of									
			Freight	Passenger	Total (inc. misc.)	Way and structures	Equipment	Traffic	Transportation	Total				1946	1945
Gulf, Mobile & Ohio	April	1,945	$2,452,961	$155,020	$2,710,723	$577,419	$576,051	$103,711	$1,026,170	$2,439,239	90.0	$271,484	$199,060	—$89,363	$427,258
	4 mos.	1,945	10,545,584	695,939	11,645,623	2,308,681	2,323,318	394,359	4,332,466	9,944,817	85.4	1,700,806	801,918	186,283	1,451,113
Illinois Central	April	5,081	10,474,588	2,629,034	14,318,293	2,540,452	2,263,923	275,566	5,317,739	11,221,965	78.4	3,096,328	1,573,032	1,371,299	2,101,787
	4 mos.	5,081	44,793,958	10,625,974	59,771,867	9,573,746	10,735,507	1,094,031	23,266,497	48,030,124	80.4	11,741,743	6,202,020	5,085,876	8,853,786
Yazoo & Mississippi Valley	April	1,524	1,845,350	360,437	2,326,035	469,334	244,307	41,426	901,076	1,750,555	75.3	575,480	204,073	291,362	557,575
	4 mos.	1,524	6,807,495	1,355,873	8,618,997	1,883,066	1,061,073	166,460	3,605,834	7,095,485	82.3	1,523,512	846,700	393,577	1,738,157
Illinois Central System	April	6,605	12,319,938	2,989,471	16,644,328	3,009,786	2,508,230	316,992	6,218,815	12,972,520	77.9	3,671,808	1,781,557	1,666,574	2,664,274
	4 mos.	6,605	51,601,453	11,981,847	68,390,864	11,456,812	11,796,580	1,260,491	26,872,331	55,125,609	80.6	13,265,255	7,066,271	5,495,104	10,611,594
Illinois Terminal	April	476	503,848	146,329	716,716	124,355	113,331	24,767	298,363	592,269	82.64	124,447	61,379	37,144	113,489
	4 mos.	476	2,107,425	571,277	2,952,015	476,991	458,112	93,075	1,228,359	2,376,127	80.49	575,888	284,126	207,352	490,976
Kansas City Southern	April	890	1,985,703	269,595	2,450,560	275,527	354,694	71,182	821,999	1,643,907	67.0	806,653	275,000	392,756	381,319
	4 mos.	890	7,701,068	971,219	9,434,677	999,046	1,389,644	290,271	3,161,996	6,323,109	67.0	3,111,568	980,000	1,615,108	1,956,302
Kansas, Oklahoma & Gulf	April	328	303,910	1,274	308,557	80,766	18,741	13,106	85,346	211,592	68.6	96,965	36,167	31,903	70,268
	4 mos.	328	1,197,218	6,169	1,217,975	168,804	99,962	51,678	344,039	718,361	59.0	499,614	189,765	214,032	319,362
Lake Superior & Ishpeming	April	156	30,656	109	33,965	52,780	52,853	779	35,562	152,031	447.6	—118,066	25,366	—136,009	175,237
	4 mos.	156	158,329	351	169,791	128,443	176,228	3,138	124,109	465,862	274.3	—296,071	103,289	—372,776	—20,142
Lehigh & Hudson River	April	96	219,099	.....	219,552	44,833	36,723	7,191	77,832	174,127	79.3	45,425	20,154	7,943	23,892
	4 mos.	96	876,902	.....	879,481	143,403	134,405	24,766	310,532	643,834	73.2	235,647	103,144	72,741	103,988
Lehigh & New England	April	190	501,530	.....	506,396	71,462	95,274	10,359	192,706	392,920	77.6	113,476	62,298	65,974	79,837
	4 mos.	190	2,000,009	.....	2,016,822	252,641	397,234	40,425	726,517	1,508,548	74.8	508,274	255,664	312,601	289,435
Lehigh Valley	April	1,254	4,234,748	571,886	5,205,312	840,342	756,589	129,113	2,513,977	4,474,917	86.0	730,395	316,990	218,240	1,196,087
	4 mos.	1,254	17,095,226	2,531,943	21,260,213	2,635,525	2,934,668	508,080	10,191,213	17,227,500	81.0	4,032,713	1,544,098	1,744,909	1,191,450
Louisiana & Arkansas	April	756	970,105	95,257	1,109,398	143,989	168,829	37,178	375,050	769,955	69.4	339,443	120,249	144,827	200,794
	4 mos.	757	3,729,957	428,441	4,324,264	587,288	642,508	154,320	1,420,859	2,992,748	69.2	1,331,516	444,254	619,884	868,631
Louisville & Nashville	April	4,759	8,874,748	2,188,324	11,948,425	2,259,281	3,083,809	253,514	4,954,940	11,091,879	92.8	856,546	850,409	218,358	1,959,566
	4 mos.	4,758	42,949,671	9,323,853	55,901,378	7,815,454	11,812,182	1,003,090	22,867,001	45,834,081	82.0	10,067,297	6,544,540	5,180,317	8,326,102
Maine Central	April	988	1,471,650	181,136	1,740,043	297,382	300,434	12,619	697,142	1,358,965	78.1	381,078	167,213	160,756	181,875
	4 mos.	988	6,229,116	824,192	7,457,907	1,214,881	1,286,672	58,038	3,160,129	5,929,854	79.5	1,528,053	629,417	474,585	677,170
Midland Valley	April	334	130,998	30	132,708	31,504	19,743	2,958	46,555	107,411	80.9	25,297	6,884	10,531	20,280
	4 mos.	334	519,230	108	527,174	105,955	59,509	11,450	199,029	400,323	75.9	126,851	45,172	49,400	92,059
Minneapolis & St. Louis	April	1,408	926,555	23,327	1,003,393	280,498	205,130	81,876	431,798	1,092,808	108.9	—89,415	80,851	—176,940	124,103
	4 mos.	1,408	4,305,658	161,443	4,677,820	1,077,880	830,710	336,926	1,911,647	4,444,844	95.0	232,976	317,957	—215,275	594,796
Minneapolis, St. Paul & Sault Ste. Marie	April	3,224	1,756,658	100,687	2,017,251	505,335	370,122	51,146	965,494	1,977,099	98.0	40,152	165,615	—76,635	113,571
	4 mos.	3,224	6,459,421	531,828	7,601,708	1,790,296	1,692,042	181,719	4,027,269	8,025,199	105.6	—423,491	651,430	—1,013,438	97,160
Duluth, South Shore & Atlantic	April	530	281,466	12,209	315,237	69,459	63,873	12,781	146,702	303,051	96.1	12,186	20,371	—24,076	139,977
	4 mos.	530	1,186,745	57,313	1,320,712	254,406	262,238	50,413	624,988	1,226,590	92.9	94,122	82,936	—40,027	192,027
Spokane International	April	152	106,081	3,373	116,246	21,123	13,137	3,067	43,347	87,631	75.4	28,615	9,713	10,151	24,537
	4 mos.	152	419,754	10,978	461,466	104,551	56,199	11,916	159,679	358,653	77.7	102,813	34,707	41,026	96,479
Mississippi Central	April	158	134,668	5,926	144,671	35,277	18,109	9,830	42,810	111,787	77.3	32,884	7,290	12,148	24,401
	4 mos.	158	483,080	27,318	524,483	122,012	68,826	38,472	151,653	408,256	77.8	116,227	29,294	34,473	105,195
Missouri & Arkansas	April	365	152,806	2,101	164,835	41,508	21,483	7,715	61,447	138,412	84.0	26,423	6,189	3,690	—55,467
	4 mos.	365	578,585	8,310	627,096	177,346	95,521	30,296	258,608	587,163	93.6	39,933	24,514	—49,977	—42,861
Missouri-Illinois	April	172	312,214	471	314,693	44,373	37,304	5,078	93,357	184,462	59.3	128,231	54,657	64,170	35,254
	4 mos.	172	1,023,356	1,640	1,032,132	167,524	134,395	19,299	308,341	657,388	63.7	374,744	174,933	179,913	146,311
Missouri-Kansas-Texas Lines	April	3,253	3,900,752	637,129	5,047,575	838,827	759,907	199,733	2,044,952	4,124,355	81.7	923,220	400,640	342,188	671,789
	4 mos.	3,253	15,057,307	2,966,458	19,885,899	3,307,916	2,649,331	788,403	7,786,249	15,638,356	78.6	4,247,543	1,839,863	1,649,216	2,791,531
Missouri Pacific	April	7,080	10,696,409	1,296,816	13,284,028	1,981,242	2,468,494	343,271	5,392,270	10,770,219	81.1	2,513,809	853,660	1,005,760	2,636,761
	4 mos.	7,080	43,523,430	7,565,703	55,937,396	8,167,817	10,228,088	1,374,465	22,201,860	44,401,872	79.4	11,535,524	3,437,244	5,678,356	11,420,123
Gulf Coast Lines	April	1,734	3,630,024	184,779	3,967,446	593,771	315,899	66,147	1,111,184	2,182,843	55.02	1,784,603	417,007	990,321	604,671
	4 mos.	1,734	12,856,538	967,874	14,382,631	2,228,306	1,386,610	264,090	4,003,473	8,253,931	57.39	6,128,700	1,574,673	3,279,935	2,455,381
International Great Northern	April	1,110	1,816,858	286,097	2,343,810	510,446	374,565	40,092	953,693	1,985,152	84.7	358,658	107,518	63,587	273,266
	4 mos.	1,110	6,218,701	1,280,523	8,457,862	1,842,159	1,368,680	171,233	3,490,599	7,300,182	86.3	1,157,680	421,785	100,337	1,209,915
Monongahela	April	170	32,333	1,731	38,192	51,694	31,214	645	66,367	155,334	406.7	—117,142	62,444	—229,899	67,360
	4 mos.	170	1,833,271	7,148	1,853,171	272,708	203,417	2,730	602,080	1,098,678	59.3	754,493	269,918	138,179	365,122

Table continued on second left-hand page.

These General Motors Diesel freight locomotives have operated over a total average of 376,570 miles—over-all average availability, 85.2%; average monthly mileage 9,323 — and over a most difficult railroad profile between Winslow, Arizona and Barstow, California. All are 5400 H.P.

LOCOMOTIVE NUMBER	MILES OPERATED	AVAILABILITY	AVERAGE MILES PER MONTH	MONTH DELIVERED
100	607,907	84.2	10,304	1-41
101	602,275	83.9	10,384	3-41
102	508,813	83.8	8,773	3-41
103	495,701	83.7	8,547	3-41
104	482,149	84.5	9,643	11-41
105	417,945	84.6	9,086	3-42
106	425,907	85.7	9,259	3-42
107	423,214	85.6	9,405	4-42
108	422,537	86.2	9,390	4-42
109	419,093	86.6	9,313	4-42
110	423,379	86.9	9,622	5-42
111	410,669	86.8	9,333	5-42
112	402,620	84.3	9,150	5-42
113	363,700	85.7	9,326	10-42
114	349,799	85.4	8,969	10-42
115	343,211	85.3	9,276	12-42
116	334,719	83.9	9,046	12-42
117	322,697	85.3	9,220	2-43
118	313,762	86.4	8,965	2-43
119	289,914	85.1	9,060	5-43
120	296,558	86.7	9,566	6-43
121	276,105	83.7	9,204	7-43
122	279,786	86.8	9,326	7-43
123	271,888	85.5	9,375	8-43
124	269,650	85.6	9,298	8-43
125	265,475	86.4	9,481	9-43
126	259,308	84.5	9,261	9-43
127	265,192	85.1	9,471	9-43

ELECTRO-MOTIVE DIVISION

GENERAL MOTORS

LA GRANGE, ILL.

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF APRIL AND FOUR MONTHS OF CALENDAR YEAR 1946

Name of Road		Av. mileage operated during period	Operating revenues: Freight	Passenger	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures	Maintenance of Equipment	Traffic	Transportation	Total	Operating ratio	Net from railway operation	Railway tax accruals	Net railway operating income 1946	1945
Montour	April	51	$19,288	.....	$19,440	$31,805	$62,220	$1,469	$45,197	$148,665	764.7	—$129,225	*$25,923	—$52,555	$53,856
	4 mos.	51	733,569	.....	738,149	81,912	263,969	6,089	305,210	692,503	93.8	45,586	105,044	97,892	175,287
Nashville, Chattanooga & St. Louis	April	1,053	1,928,995	$320,534	2,476,305	534,856	567,792	96,123	1,084,896	2,382,792	96.1	93,513	202,906	—116,008	407,471
	4 mos.	1,053	7,331,068	1,661,284	9,922,694	2,074,237	2,187,129	393,263	4,412,767	9,440,071	95.1	482,623	632,499	—176,599	2,034,299
New York Central	April	10,746	30,356,341	12,295,557	47,526,208	6,490,982	10,706,850	951,294	22,429,724	43,203,955	90.9	4,322,253	1,857,294	566,868	5,332,579
	4 mos.	10,746	127,351,198	49,357,688	195,260,810	29,103,928	43,065,385	3,496,976	94,967,079	181,443,939	92.9	13,816,871	6,965,733	616,204	16,462,535
Pittsburgh & Lake Erie	April	229	1,372,273	89,296	1,567,301	308,751	802,048	56,190	948,351	2,255,957	143.9	—688,656	*26,991	—40,163	454,781
	4 mos.	229	6,836,939	370,440	7,528,378	1,428,620	3,320,276	200,295	3,987,964	9,454,319	125.6	—1,925,941	170,167	401,787	1,427,196
New York, Chicago & St. Louis	April	1,687	5,246,180	296,327	5,677,906	859,081	1,067,641	168,493	2,402,945	4,742,501	83.5	935,405	361,114	274,797	1,989,054
	4 mos.	1,687	21,050,923	1,135,314	22,710,798	3,358,422	4,049,166	687,189	9,836,850	18,855,130	83.0	3,855,668	1,465,586	1,201,028	5,609,801
New York, New Haven & Hartford	April	1,843	6,198,166	5,069,152	12,304,162	2,023,939	1,952,134	214,914	5,409,769	10,467,822	85.1	1,836,340	840,000	—120,847	2,117,148
	4 mos.	1,839	24,089,889	20,602,432	48,747,363	7,426,712	7,781,663	819,651	21,969,259	41,398,886	84.9	7,348,477	3,368,500	—248,127	6,229,131
New York Connecting	April	21	151,740	.....	161,444	56,627	13,740	.....	61,440	133,644	82.8	27,800	58,891	56,259	224,714
	4 mos.	21	699,646	.....	722,379	193,287	70,009	.....	246,888	517,128	71.6	205,251	242,826	414,275	565,912
New York, Ontario & Western	April	547	536,848	†1,406	625,177	90,706	106,097	27,510	321,658	573,870	91.8	51,307	39,400	—67,990	—76,571
	4 mos.	547	1,934,300	14,394	2,247,705	344,691	425,289	100,280	1,304,186	2,292,709	102.0	—45,004	155,383	—476,420	—738,142
New York, Susquehanna & Western	April	120	246,768	43,406	300,157	32,809	34,170	5,639	148,442	239,264	79.7	60,893	38,222	—17,025	75,814
	4 mos.	120	1,165,331	167,159	1,389,505	121,410	134,652	18,645	612,564	957,513	68.9	431,992	156,247	45,882	203,616
Norfolk & Western	April	2,161	3,780,994	965,205	5,042,359	1,419,481	2,075,362	197,805	2,532,942	6,595,864	130.8	—1,553,505	168,272	—867,414	2,202,212
	4 mos.	2,161	34,677,431	4,465,300	40,381,343	5,858,172	9,168,130	809,868	13,159,968	30,528,118	75.6	9,853,225	7,099,315	6,148,391	8,578,528
Norfolk Southern	April	727	570,616	14,087	608,468	176,389	77,523	34,858	243,729	567,312	93.2	41,156	40,410	—35,573	33,309
	4 mos.	727	2,417,974	62,577	2,564,109	666,166	324,297	137,058	985,433	2,249,693	87.7	314,416	160,684	1,616	175,906
Northern Pacific	April	6,872	7,446,681	1,273,196	9,709,211	2,053,302	2,027,454	218,577	3,803,148	8,698,438	89.6	1,010,773	897,340	498,503	1,322,036
	4 mos.	6,872	29,954,053	6,156,879	39,998,103	7,464,019	8,349,392	829,935	16,344,335	35,477,250	88.7	4,520,853	3,631,621	2,335,917	5,924,671
Northwestern Pacific	April	331	317,029	9,594	345,683	142,176	55,290	4,391	173,891	385,466	111.5	—39,783	26,217	—79,311	—17,841
	4 mos.	331	1,213,393	26,056	1,321,539	683,727	258,645	13,094	735,788	1,726,627	130.7	—405,088	113,625	—605,911	140,252
Oklahoma City-Ada-Atoka	April	132	85,058	.....	86,179	24,426	4,190	1,352	21,044	55,282	64.1	30,897	11,436	12,497	15,758
	4 mos.	132	329,079	1	344,052	85,716	19,192	4,912	99,672	224,855	65.4	119,197	33,838	35,525	71,166
Pennsylvania	April	10,121	36,803,558	18,189,719	60,544,163	8,150,079	15,712,429	1,340,677	30,127,407	58,412,759	96.5	2,131,404	3,862,966	—2,266,716	12,804,272
	4 mos.	10,121	161,645,941	76,013,644	258,637,688	30,538,577	61,823,077	5,025,426	129,991,888	240,344,470	92.9	18,293,218	15,894,284	543,210	39,150,491
Long Island	April	376	1,140,941	2,418,338	3,738,493	422,458	550,997	11,071	1,885,123	2,946,441	78.8	792,052	429,464	60,958	290,789
	4 mos.	376	4,261,660	8,657,751	13,718,435	1,714,109	2,104,428	56,790	7,527,979	11,717,248	85.4	2,001,187	1,713,091	—808,780	—110,874
Pennsylvania-Reading Seashore Lines	April	390	419,281	328,696	775,475	157,475	112,688	9,262	480,144	789,756	101.8	—14,281	92,387	—218,456	—70,000
	4 mos.	390	1,557,248	1,024,009	2,690,662	676,993	437,926	30,793	1,894,185	3,145,371	116.9	—454,709	370,711	—1,228,332	—620,043
Pere Marquette	April	1,949	3,459,574	174,523	3,868,035	692,442	817,473	99,631	1,757,229	3,576,351	92.5	291,684	266,552	—77,423	662,152
	4 mos.	1,949	13,452,876	798,360	15,005,605	2,469,463	3,127,621	381,346	6,912,318	13,679,756	91.2	1,325,849	1,033,842	—74,381	2,609,317
Pittsburg & Shawmut	April	97	19,711	.....	21,069	29,912	19,300	2,357	14,973	73,878	350.6	—52,809	3,223	—58,494	13,746
	4 mos.	97	440,069	.....	447,578	91,900	104,905	9,667	150,612	382,935	85.6	64,643	17,025	31,024	78,714
Pittsburgh & West Virginia	April	136	228,229	.....	303,895	62,537	90,419	26,175	102,524	309,768	101.9	—5,873	26,659	—11,117	214,175
	4 mos.	136	1,236,417	.....	1,313,551	270,654	341,384	109,176	480,961	1,321,529	100.6	—7,978	110,094	4,281	849,497
Pittsburg, Shawmut & Northern	April	190	33,127	.....	33,651	17,801	15,152	1,024	25,760	65,859	195.7	—32,208	5,165	—43,802	—12,424
	4 mos.	190	298,009	.....	301,014	68,751	59,982	4,167	153,902	311,133	103.4	—10,119	22,586	—64,553	—37,093
Reading	April	1,362	6,154,029	897,338	7,456,151	1,306,588	1,720,549	105,607	3,400,273	6,773,248	90.8	682,903	467,506	200,530	1,154,832
	4 mos.	1,362	27,286,090	4,068,700	32,960,396	5,127,502	7,049,534	408,859	14,618,819	28,205,890	85.6	4,754,506	2,735,174	1,722,897	4,415,694
Richmond, Fredericksburg & Potomac	April	118	1,124,210	924,172	2,239,704	303,772	265,709	17,528	929,614	1,626,396	72.6	613,308	258,076	208,261	190,543
	4 mos.	118	4,595,859	4,063,537	9,389,602	1,195,897	1,201,540	67,021	3,385,556	6,316,764	67.3	3,072,838	1,309,644	1,252,272	760,364
Rutland	April	407	305,590	45,389	415,736	70,216	85,232	12,790	227,514	411,054	98.9	4,682	25,905	—35,492	—2,848
	4 mos.	407	1,222,388	185,936	1,663,119	265,940	358,939	51,610	949,425	1,688,573	101.5	—25,454	107,297	—164,713	—209,284
St. Louis-San Francisco	April	4,645	5,405,619	1,050,937	7,085,596	1,457,258	1,744,935	199,592	3,283,122	7,075,291	99.9	10,305	542,731	—455,511	1,438,497
	4 mos.	4,645	22,198,029	5,140,900	29,944,754	6,017,244	6,968,942	785,241	13,372,763	28,711,627	95.9	1,233,127	2,210,453	—720,697	5,897,541
St. Louis, San Francisco & Texas	April	160	231,752	16,196	260,535	46,685	40,768	13,404	134,353	243,588	93.5	16,947	14,424	—24,936	33,052
	4 mos.	160	982,805	89,307	1,113,776	184,235	149,826	50,002	508,995	926,358	83.2	187,418	54,338	22,254	114,439

† Debtor.
* Credit.

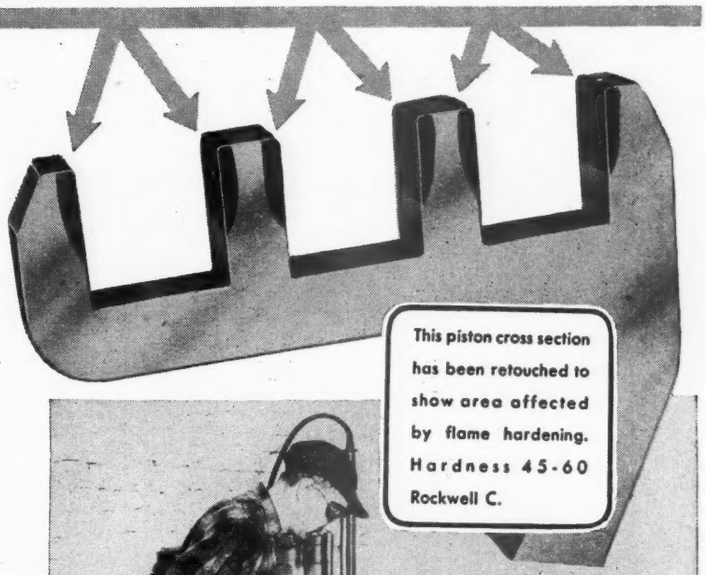
Table continued on next left-hand page.

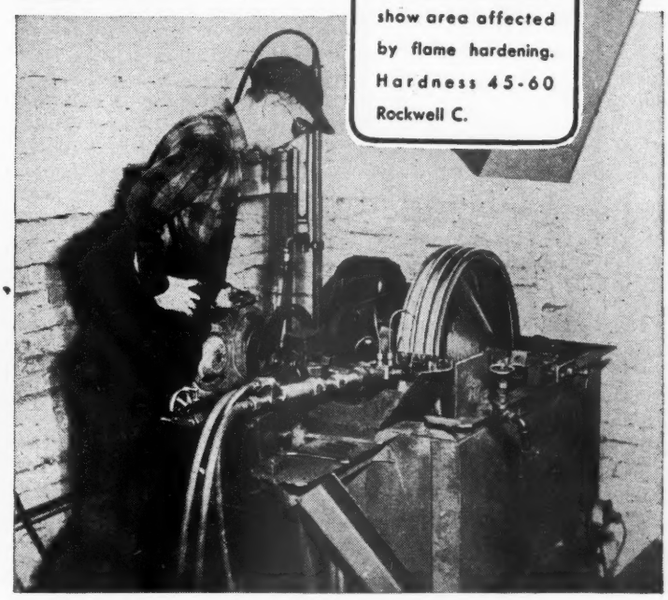
FLAME HARDENING

AT POINTS OF GREATEST WEAR

INCREASES THE LIFE OF

HUNT-SPILLER LIGHT-WEIGHT ALLOY STEEL PISTONS





Machine used for flame hardening operation.

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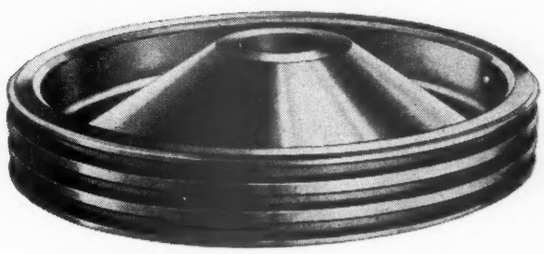

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LIGHT WEIGHT
STEEL PISTONS AND VALVES
DUPLEX SECTIONAL PACKING
AIR FURNACE GUN IRON

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF APRIL AND FOUR MONTHS OF CALENDAR YEAR 1946

Name of Road		Av. mileage operated during period	Operating revenues: Freight	Passenger	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures	Maintenance of Equipment	Traffic	Transportation	Total	Operating ratio	Net from railway operation	Railway tax accruals	Net railway operating income 1946	Net railway operating income 1945
St. Louis Southwestern Lines	April	1,575	$3,711,783	$148,744	$4,029,088	$584,875	$581,789	$111,402	$1,170,134	$2,596,716	64.4	$1,432,372	$490,280	$795,747	$894,107
	4 mos.	1,575	13,594,889	644,092	14,807,585	2,794,573	2,467,913	461,021	4,638,101	10,963,847	74.0	3,843,738	1,302,355	1,960,174	3,801,102
Seaboard Air Lines	April	4,150	7,641,036	2,092,786	10,411,663	1,854,360	1,748,113	274,676	3,890,073	8,254,579	79.3	2,157,084	642,645	1,045,588	1,525,732
	4 mos.	4,150	28,790,476	9,520,102	41,078,848	6,545,285	6,745,886	1,098,113	15,512,777	31,874,435	77.6	9,204,413	2,812,587	4,630,878	6,826,427
Southern Railway	April	6,484	12,201,221	3,067,115	16,515,416	2,933,943	3,208,696	315,691	6,782,152	13,981,298	84.7	2,534,118	1,195,698	969,860	2,813,097
	4 mos.	6,484	52,084,582	14,350,878	71,482,965	11,376,593	13,151,700	1,238,064	27,888,109	56,731,202	79.4	14,751,763	6,605,728	6,562,711	11,290,882
Alabama Great Southern	April	315	892,942	272,365	1,241,611	218,929	278,233	24,651	482,802	1,059,204	85.3	182,407	89,132	64,090	155,134
	4 mos.	315	3,285,832	1,148,613	4,752,060	850,208	1,116,945	103,380	1,818,535	4,128,036	86.9	624,024	381,113	171,000	680,582
Cincinnati, New Orleans & Texas	April	337	1,769,970	389,891	2,319,474	311,477	493,251	43,055	843,119	1,787,365	77.1	532,109	288,383	275,309	339,870
	4 mos.	337	6,930,653	1,648,471	9,188,344	1,243,618	2,238,400	164,022	3,249,453	7,299,842	79.4	1,888,502	1,026,495	1,038,560	1,530,501
Georgia Southern & Florida	April	397	375,467	93,825	512,028	97,758	71,505	7,006	215,421	407,104	79.5	104,924	34,413	31,470	83,236
	4 mos.	397	1,339,843	491,847	2,021,626	376,626	277,364	23,935	810,876	1,556,848	77.0	464,778	164,490	166,280	278,514
New Orleans & Northeastern	April	204	514,871	138,425	693,080	157,222	82,389	13,484	216,104	504,180	72.7	188,900	71,780	56,443	91,337
	4 mos.	204	2,020,860	615,090	2,808,569	562,067	364,427	54,763	857,919	1,995,368	71.0	813,201	325,345	246,991	464,531
Southern Pacific	April	8,246	22,411,467	5,781,657	31,124,339	4,843,209	6,787,825	744,590	14,711,037	29,427,160	94.5	1,697,179	*2,111,083	3,066,138	3,066,486
	4 mos.	8,247	84,418,942	28,252,302	124,611,439	20,422,986	28,713,950	2,945,993	52,063,959	113,429,926	91.0	11,181,513	1,679,457	5,677,200	12,156,322
Texas & New Orleans	April	4,322	6,531,462	1,334,080	8,495,855	1,581,303	1,599,697	175,764	3,636,463	7,419,277	87.3	1,076,578	557,695	34,236	1,117,946
	4 mos.	4,322	25,280,113	6,478,827	34,193,975	6,227,305	5,818,951	699,426	12,340,128	26,809,095	78.4	7,384,880	868,279	4,756,210	4,497,691
Spokane, Portland & Seattle	April	944	1,257,702	84,068	1,470,092	510,011	198,868	17,645	581,148	1,379,157	93.8	90,935	5,186	—85,133	189,076
	4 mos.	944	5,184,149	433,918	6,058,717	1,824,753	753,805	69,320	2,318,650	5,245,452	86.6	813,265	374,928	25,965	982,778
Tennessee Central	April	286	227,424	22,760	267,211	46,248	49,520	6,608	104,217	220,322	82.5	46,889	29,805	9,942	32,594
	4 mos.	286	976,215	77,283	1,123,885	216,650	215,666	26,387	475,676	990,970	88.2	132,915	93,693	—20,310	150,798
Texas & Pacific	April	1,874	3,551,413	904,994	4,930,860	811,169	822,198	107,485	1,609,565	3,631,029	73.6	1,299,831	392,943	768,148	685,664
	4 mos.	1,874	12,182,919	4,172,377	18,200,505	2,790,760	2,812,050	534,491	6,147,568	13,480,123	74.1	4,720,382	1,500,862	2,637,013	2,667,591
Texas Mexican	April	162	213,252	233	241,465	76,749	25,974	4,687	66,409	185,872	77.0	55,593	20,097	22,202	20,930
	4 mos.	162	683,153	1,600	772,876	189,131	89,395	17,799	224,135	565,150	73.1	207,726	78,500	82,791	—21,301
Toledo, Peoria & Western	April		Not yet filed.												
	4 mos.		Not yet filed.												
Union Pacific System	April	9,775	18,533,439	4,950,248	26,135,237	3,961,095	5,438,502	645,930	9,709,784	21,784,855	83.4	4,350,382	2,196,289	1,452,130	2,646,487
	4 mos.	9,776	78,377,700	24,051,769	113,642,467	15,217,984	22,761,606	2,539,298	43,018,733	91,243,194	80.3	22,399,273	11,197,879	8,527,312	11,495,152
Utah	April	111	2,429	.....	2,425	16,142	24,563	665	11,357	58,056	2394.1	—55,631	*10,862	—41,654	8,312
	4 mos.	111	500,168	.....	500,524	77,110	159,925	2,660	187,197	447,102	89.3	53,422	45,935	11,742	52,752
Virginian	April	661	538,733	8,438	581,532	189,496	408,556	31,982	287,309	984,422	169.3	—402,890	*55,000	—193,345	930,850
	4 mos.	661	7,850,428	29,909	8,141,200	1,050,911	2,342,092	126,761	2,031,046	5,808,312	71.3	2,332,888	1,341,700	1,572,383	2,697,236
Wabash	April	2,393	5,218,580	640,295	6,270,933	1,002,472	957,215	193,508	2,797,315	5,272,633	84.1	998,300	140,759	481,673	857,788
	4 mos.	2,393	20,795,809	2,782,819	25,311,064	3,655,832	3,988,658	803,269	11,157,135	20,757,329	82.0	4,553,735	1,191,205	2,068,314	3,418,790
Ann Arbor	April	294	471,916	5,973	489,872	68,625	94,596	18,531	245,720	441,674	90.2	48,198	21,836	2,019	70,483
	4 mos.	294	1,938,128	23,782	2,001,393	247,306	373,744	76,144	999,305	1,751,188	87.5	250,205	125,286	69,298	213,806
Western Maryland	April	839	1,547,228	34,349	1,673,297	428,918	467,454	62,610	716,271	1,785,558	106.7	—112,261	15,000	—85,869	554,665
	4 mos.	839	9,263,855	169,194	9,887,994	1,429,982	2,007,557	236,253	3,580,900	7,718,980	78.1	2,169,014	1,000,000	1,308,334	2,328,473
Western Pacific	April	1,195	2,447,679	579,418	3,156,981	498,563	517,295	111,635	1,259,096	2,551,169	80.8	605,812	209,550	344,989	481,137
	4 mos.	1,195	10,026,859	3,056,913	13,581,304	2,209,444	2,241,447	452,263	4,940,379	10,549,831	77.7	3,031,473	1,301,550	1,336,145	2,192,230
Wheeling & Lake Erie	April	505	1,011,159	.....	1,057,461	220,650	326,870	48,175	515,053	1,168,917	110.5	—111,456	109,499	—30,858	310,987
	4 mos.	505	5,484,857	13	5,647,222	842,335	1,379,028	198,426	2,305,953	4,967,754	88.0	679,468	842,444	568,336	1,230,284
Wisconsin Central	April	1,051	1,521,662	123,990	1,823,782	261,802	264,499	52,632	788,214	1,438,796	78.9	384,986	112,507	118,263	443,979
	4 mos.	1,051	6,189,954	409,802	7,232,472	935,220	1,221,233	186,545	3,515,793	6,133,283	84.8	1,099,189	465,929	95,688	855,988

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Current Publications

Books

An Outline of Railway Traffic Operation, by T. F. Cameron. 205 pages, illustrations. Published by The Railway Publishing Company, Ltd., 33 Tothill Street, Westminster, S. W. 1, London, England. Price 12 shillings.

The material in this book has appeared serially in "The Railway Magazine" and is designed to help British railroaders to a better understanding of the principles that guide the vast and complex organizations they serve. It includes chapters on the organization of a railway, rules and regulations, preparation of timetables, signal operations, freight and passenger train operation and statistics of operations. It is illustrated and contains a brief index.

The Brotherhood of Sleeping Car Porters, by Brailsford R. Brazeal. 258 pages, illustrations. Published by Harper & Brothers, 49 E. 33rd. Street, New York 16, N. Y. Price $3.00.

This book is a record of one of the least known labor organizations in the United States and reveals the struggle of the American Negro to secure recognition in the world of organized labor. It tells the story of the beginnings, growth and present activities of the Brotherhood of Sleeping Car Porters. It contains quite an extensive bibliography and is well-indexed.

Trade Publications

50 Billion Records Can't Be Wrong. 36 pages. Published by Recordak Corporation, 350 Madison Ave., New York, N. Y. Free.

The book first explains the fundamentals of microfilming—for preserving valuable records, saving costly storage space, speeding up reference to office records, and for making facsimile prints of "files on film."

Descriptions of Recordak equipment explain how the general run of business documents, such as letters, reference cards, and reports on single sheets—up to 14 inches in width and unlimited in length—are photographed on 16 mm. film. These Recordak models are available only on a rental basis and installations include a companion film reader for convenient reference to film records on the desk top.

For microfilming bound volumes and large drawings, charts and diagrams 35 mm. film is used in Micro-File Recordak equipment. These units come in floor and table models for fixed installations, and a portable model for field use. Companion film readers for viewing 35 mm. microfilm include a floor model and a portable projector for field use. Also described is the Recordak Enlarger, for making facsimile prints of drawings and documents on the spot.

The book concludes with a description of the special Recordak microfilming services. The facsimile service provides paper prints of lengthy reports, card files, and other business records in any quantity. The newspaper service microfilms current and back issues to protect them against loss from deterioration and fire.

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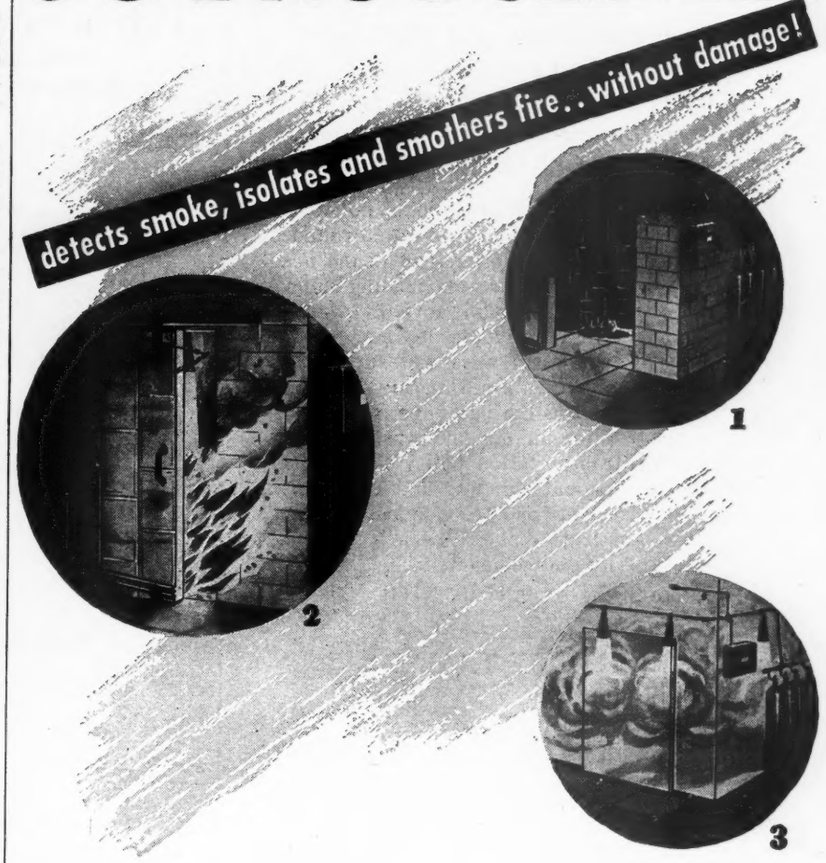

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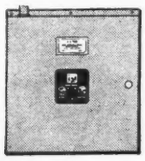

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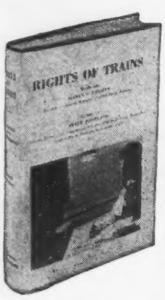

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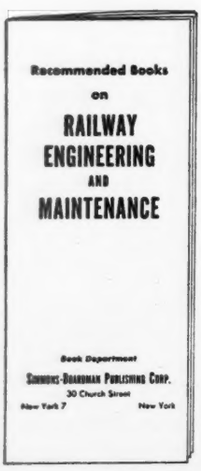

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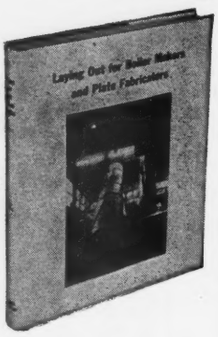
Boiler Designer, New York Central



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